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PART I

LECTURES DELIVERED UNDER THE AUSPICES OF SIR SUBRAMANIA AYYAR ENDOWMENT MADRAS UNIVERSITY, 1972.

SOME ASPECTS OF PANDYAN HISTORY IN THE LIGHT OF RECENT DISCOVERIES

Dr K. V. RAMAN

INTRODUCTION

The Pandyas were one of the oldest royal lines to have ruled in the Tamil country. Probably, they have also the longest and most continuous history right from the Sangam period upto even the 16th century. The Cholas and the Cheras, though equally old, had long and intermittant breaks. For instance, the Chola dynasty after its initial glory during the Sangam Age, was out of the foot-lights of history during the 5th to 8th centuries and it had a revival only in the middle of the 9th century A.D. under the famous Vijayalaya. Again, after a spell of glorious rule for four centuries, they fell from power towards the end of the 13th century, after which almost nothing was heard about them.

But the Pandyas, except for the brief period of the Kalabhra interregnum, occupied the political stage continuously almost upto the modern times. Even while the Pandyan kingdom came under the control of the Cholas, the Pandyan rulers rose from time to time with the banner of revolt and succeeded in reviving it soon. Similarly, in the midst of adverse circumstances when Madurai was occupied by the Sultans in the beginning of the 14th century, the Pandyan rulers shifted their capital to Tenkasi and Tirunelveli and continued to rule till the 17th century. In short, theirs is a long record of an unbroken rule in Tamil Nadu, unique in the annals of any ruling dynasty of the world.

Yet, paradoxically, their history is perhaps the briefest that is available to us today. The pioneering work of the doyens of epigraphy and history like Venkayya and K. V. Subramania Aiyar, Harihara

Aiyar, Kanakasabai Pillai, T. A. Gopinatha Rao, L. D. Swamikkannu Pillai, C. R. Krishnamacharlu and others, did the spade work and collected valuable information from epigraphy and literature. Prof. K. A. Nilakanta Sastri's celebrated work *The Pandyan Kingdom* published in 1929, represents the best outcome of all the data that was available at that time. It was indeed a challenging task to write a connected history of the Pandyas especially because of the well known difficulties involved in the task such as their practice of adopting the same names and titles alternately by the kings, co-regencies, the peculiar method of dating adopted in their records etc. The history of the Second Pandyan empire i.e., from the accession of Jatavarman Kulasekhara I (A.D. 1190) is very well documented. But, for the earlier history, the records were limited, in sharp contrast to the records that were available for the Pallavas. Still, with the data available, Prof. Sastri has given us a connected account for the period. But that was in 1926, almost half a century ago! From then on, several hundreds of inscriptions of the Pandyas have been reported which have given us new and additional material for writing the political and cultural history of the Pandyas. Thanks to the intensive exploration and coverage done by the Epigraphical Branch of the Archaeological Survey of India, almost every temple in Pandya Nadu has been covered and their inscriptions therein have been reported. We must also be thankful to the Epigraphical Department for publishing a volume entitled "*Pandyan Inscriptions*" in their series South Indian Inscriptions Vol. XIV, where they have published the originals of all the reported inscriptions of the Pandyas upto the time of Jat. Srivallabha (early 12th century). This is an important source meterial for the Pandyan history which has not been made full use of by the scholars so far.

The discovery of two copper plate inscriptions viz., the Dalavaypuram copper plate and the Sivakasi copper plate is another important addition to our knowledge on the subject. They furnish many hitherto unknown facts on Pandyan geneology and other related aspects. They have been briefly reported in Epigraphical Reports for the years 1958-59 and 1960-61. The full texts of the twó copper plates have been published by T. N. Subramaniam in the Journal of Archl. Society and later by *Tamil Varalatru Kazhagam* in their *Pandiyar Seppedugal.* Equally valuable is the volume on the inscriptions of Kanyakumari

District published recently by the Department of Archaeology, Government of Tamil Nadu. *South Indian Temple Inscriptions* — published by the late lamented Epigraphist, Shri T. N. Subramaniam gives the originals of several Pandyan inscriptions. Dr. K. K. Pillay's "*Sucindram Temple*" and Sadasiva Pandarattar's *Pandiar Varalaru* give the contents of some unpublished Pandyan inscriptions. The contributions of the epigraphists like the late A S. Ramanatha Aiyar and Shri K. G. Krishnan in the volumes of Epigraphia Indica give valuable information on the new inscriptions of the Pandyas.

The Temple Survey Project of the Archaeological Survey of India undertook a survey of all the rock-cut cave temples of the Pandyas and a full volume has been prepared by Shri K. V. Soundara Rajan with detailed drawings and photographs, awaiting publication.

The above facts are only selected examples to show how the evidences are growing on the subject and it will be worthwhile to take stock of the developments. This is what I propose to do in these lectures. I have gone through all the inscriptions that have come to light since 1929, both stone and copper-plate and have endeavoured to discuss the more important ones under appropriate heads. This will help to highlight the importance of the evidences and draw the attention of scholars to undertake further work in the field. I have also taken stock of the discoveries in the related fields — like numismatics, architecture and iconography.

I have divided my lectures under two headings — in the first lecture I will discuss the importance of recent discoveries relating to political and administrative aspects and in the second lecture, I propose to discuss the social, economic and cultural aspects.

Lecture 1

POLITICAL AND ADMINISTRATIVE ASPECTS

A. POLITICAL

Among the recent discoveries relating to the earlier history of the Pandyas, I have to mention the valuable contributions made by Sri Iravatham Mahadevan in the reading of the Brahmi inscriptions which cluster round the Pandyan country. His readings have enabled us to recover the hitherto unknown or less known names and

words. Several names of villages, towns, kings, chieftains and dynasties, merchant classes have come to full light. We are able to identify the name of the celebrated Pandyan king Nedunjchelian in the two inscriptions found at Mangulam — perhaps the earliest epigraphical evidence on a Pandyan king. It mentions the gift of the cave by one Catikan, the brother-in-law (or Salakan) of Nedunjchelian. Another inscription records the gift to the same cave by Katalan Valuttiyan, an officer of Nedunjchelian. The suffix *valuti* is a characteristic appellation of the Pandyas. Their donation to the Jain monasteries is noteworthy. The inscription at Pillaiyarpatti in Ramanathapuram Dt. mentions one Peru Paranan, the chieftain of Erukkattor. The Brahmi inscription recently discovered by me and my friend Y. Subbarayalu at Arittapatti very near Mangulam records the gift of a Pandyan chieftain by name Chaḷivan Adanan Veḷiyan to a local Jain cave.[1]

Besides the names of the kings and chieftains of Pandya Nadu, the early Brahmi inscriptions furnish us with valuable information regarding the state of Jainism in Pandya Nadu, the various towns and ports, the merchantclasses and guilds etc., which I will discuss in a later context.

1. Two important discoveries relating to the Pandyan history are the inscriptions found at Malayadikkuruchchi in Tirunelveli district and the Vaigai bed at Madurai in 1959 and 1961 respepectively. Both apparently belong to one and the same king Maran Seliyan Sendan.[2] The Malaiyadikkurichchi inscription is in the mixed Tamil and Vatteluttu characters of the 7th century and it is dated 17th regnal year of Maran Sendan whose rule commenced probably in A. D. 653. This inscription which is found in the rock-cut cave temple is now the earliest among the Pandyan inscriptions so far available. It records the founding of the cave by one officer under the orders of the Pandyan king. This incidentally helps us to identify a well dated Pandyan cave, ascribable to the 7th centurry A. D. This point will be adverted to by me in a later context.

---

1 K. V. Raman and Y. Subbarayalu: "A New Tamil Brahmi inscription from Arittapatti", *Araichi*, December '71.

2 ARE, 1959-60, p. 358.

The other inscription of Sendan was found accidentally in the bed of the Vaigai river at Madurai. I had the chance to notice this first. It was used by a washerman for washing the clothes. After seeing the early character of this I arranged to remove the stone to a safer place and advised the washerman not to misuse it. Later Shri K. G. Krishnan, Superientendent for Epigraphy, Govt. of India, arranged to take estampages and report it in the official bulletin.[3] The inscription both palaeographically and historically is a valuable record. The Sanskrit portion of the text is written in grantha and the Tamil portion in Vatteluttu characters. The verse form of the text anticipates the *Meykkirthi* so popular in later times. The style of text is reminiscent of the later *manipravala* style.

The inscription is dated in the 50th regnal year of Sendan, who is identified with Seliyan Vanavan Sendan, mentioned in the Velvikkudi grant. So far, only his name was known to us. Now, through this inscription we get to know many of his achievements, hitherto unknown to us. It states that Sendan performed many charitable deeds like the *Hiranyagarbha, Tulabhara* and other *maha-danas* founded the city of Mangalapura (where his grandson fought with the Maharathas) and constructed a sluice to the Vaigai river and named it as *Arikesariyan*, evidentely after his successor and heir-apparent Arikesari. It may be remembered that the Velvikkudi grant also mentions Mangalapura as the place where Sendan's grandson Kochchadaiyan Ranadhiran fought with the Mahrathas or the Chalukyas. The identification of Mangalapura was eluding us. Now, according to the Vaigai bed inscription, it was founded by the Pandyan king Sendan and so the place can be with more justification identified with Mangalam, on the northern bank of Kollidam in Tiruchchirapalli district. The two Chalukyan invasions of the Tamil country took place in A. D. 634-35 and 674 which brought them so far as the Kaveri and it is quite likely that they wanted to capture Mangalapuram, which was founded by the Pandyan king Sendan.

Shri K. G. Krishnan identifies this king with Sendan mentioned in the *Muthollayiram* and also in the *payiram* of *Culamani*.[4] The name of

3 ARE, 1961-62, p. 14-15.

4 K. G. Krishan: *Some Recent Discoveries in Pandyan History*, paper read in Pandyan Seminar, 1970.

Arikesari, son of Sendan is immortalisad in the *Pandikkovai.* Sinnamanur plates inform us that the village was known as Arikesari nallur.

2. *Tirupparankunram inscription of Varaguna I*

Two important inscriptions with dates in Kali Era have been discovered at Tirupparankunram — one is in Sanskrit found on the lintel of the Durga shrine and the other in Tamil and Vatteluttu characters found on one of the pillars of the cave.[5] Both of them in Kali 3874 in the 6th year of Maranjadaiyan, mention his military general Samantan Ganapathi who excavated the caveshrine for Siva and a tank. His wife excavated the shrines for Durga and Jyesthadevi. The Kali date enables us to fix the date of the inscription as A. D. 773-74. This inscription becomes another important land-mark in the chronology of the early Pandyan kings. This date being his 6th regnal year of Maranjadaiyan (alias Varaguna I), the date of the commencement of his rule may be fixed without doubt as A. D. 767-768.

Samantan Ganapati, the founder of this cave is described as Pandi-Amrita-mangalavaraiyan and a mahasamantan of the king.

3. *Perumpulli Inscription:*

An early Pandyan inscription discovered at Pērumpulli in Dindigul Taluk in 1955 throws some new light on the history of the area.[6] It is engraved in the characters of the 9th century. At the beginning it recounts the exploits of members belonging to four successive generations of a family who served the Pandyan kings. They are :—

1) Pallivelan

2) His son Parantaka-Pallivelan is stated to have completed the Idavai-campaign (*Yattirai*).

3) His son Pulla-Nakkan who served Maharaja Sadaiya-Maran in the compaigns of Vilinjam, Idavai and Tirukkudamukku. This king is obviously none other than Sri-Maran Sri Vallabhan, who was the famous hero of these compaigns.

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5 K. G. Krishnan: *Two Pandyan Inscriptions from Tirupparankunram,* E. I. XXXVI

6 290 of 1955-56; E. I. XXXII, p. 268.

4) His son Nakkan-Pullan, who rendered many services to Varaguna-Maharaha and a Simhala king is mentioned in this connection.

This interesting record shows how dedicated was this family of heroes who successively served the ruling Pandyan kings. Thus, Nakkan Pullan served King Varaguna II, his predecessor Pulla Nakkan served Sri Maran Sri Vallabhan, the victor of Vilinjam, Idavai etc.; his pre decessor Parantaka Palli Velan served under Nedunjadaiya Parantaka.

4. *An Early Pandian hero-stone at Vilinjam:*

An inscription on a stone pillar at Vilinjam and now kept in the Padmanabhapuram Museum bears an inscription of 8th century in Vatteluttu and records the death of a hero on the occasion of the capture of Vilinjam.[7] The hero is stated to have discharged his debt (*Senjorrupperungadan*) by giving up his life for the sake of his master, whose identity is not known. The capture of Vilinjam is mentioned frequently as an important achievement of the Pandyan kings right from the days of Nedunjadaiyan Parantaka. This inscription may well belong to him or his successor Sri Maran Sri Vallabha.[8]

Another inscription from the same place dated 27th year of Maranjadaiyan records that when the Chera forces attacked Karaikottai Tadam Perumtinai, a Ulvittu-Sevaka, a hero by name Ranakirti of Perumur laid down his life.

5. *Inscription of Srimaran Sri Vallabhan* (Acc. A. D. 815)

An inscription from Erukkangudi is dated 18th year of Nedumaran Sri Vallabha and who won victories in several battles like Kunnur and Singalam.[9] The king honoured one Etti-Sattan with the title Iruppaikkudi-Kilavan. He came of the family of one poet who had the distinction of being seated on the stone slab (*Sangappalagai*) at Madurai. His various acts of benefaction including irrigation schemes etc., are listed. He was a generous administrator, alive to the needs of the country and the welfare of the people he governed. He constructed two Siva temples and a Jaina palli and excavated two irrigation

7 470 of 1958-59

8 471 of 1958-59

9 334 of 1929-30

tanks called *Tirumaran-eri* and *Tirumal-eri* to improve the water-supply in the usually arid tract of Ramanathapuram.

Srimaran's surname was *Avanipasekharan.* Probably, he issued the coin named *Avanipasekharan-Gulagai.*[10]

Srimaran Sri Vallabhan's inscription has been found at Sittannavasal. It states that the village Arrur-Sendamangalam in Tiruchendurtaluk was known Avanipasekhara-Chaturvedimangalam after Srimaran.[11] Similarly, Sri Vallabha-Valanadu was evidently called after him.[12]

These are some of the facts recently known from inscriptions about Srimaran Sri Vallabhan. But by far, the most valuable records of Pandyan history that have come to light in recent times are the two copper plate grants viz., the Dalavaypuram plates of Vira Narayana and the Sivakasi plates of Vira Pandya.

6. *Dalavaypuram copper plate*

This was accidentally discovered in 1958 while digging the lands belonging to Dalavay family at Dalavaypuram near Koilpatti. The donor of this grant was Parantaka Vira Narayana, son of Srimara Sri Vallabhan and younger brother of Varaguna II. This remarkable copper plate record has furnished very valuable and hitherto unknown details not only about the king who issued it but also about his predecessors. The Sanskrit portion of this grant was composed by one Tamilabharanan alias Pandi Marayan. Let me give the highlights of the copper plate grant one by one.

(i) First about Kadungon, the founder of the Pandyan empire, it states that he granted the village of Tirumangalam to twelve Brahmins by a copper plate grant. Another similar grant by a king who obtained Siddhi (died) at his residence at Kaludur. These original charters were lost and hence need for a fresh grant.

10 ARE 1929-30, p. 73

11 *Ibid*, p. 74

12 *Ibid*, p 75

13 ARE 1958-59, pp. 5-6 ; *Pandiyar Seppedugal* and T. N. Subramaian's article in Archl. Society Journal, 1962-65

(ii) Between Kadungon and Jatila Parantak, the charter describes the achievements of the kings such as the victories in the battles at Idaiyarai and Vembaikkudi. The battles of Karuvur and Ānūr, where Jatila Parantaka and his son Srimaran Sri Vallabhan successively defeated the Kadava are known to us for the first time.

(iii) Srimaran's father is mentioned as Jatila Parantaka. In the Sinnamanur bigger plate, he is mentioned as Varaguna. Therfore, we are able to know that they refer to one and the same person i.e., Jatila Parantaka was also called Varaguna. For us, he is Varaguna I.

(iv) For the first time, we are also informed that Srimaran Sri Vallabhan won a victory against the combined forces of his enemies at Kudandai or Kumbakonam. It was a formidable confederacy of several forces, the Cheras, the Cholas, the Kupakas, the Gangas, the Kalingas and the Mahadas. The Pandya king killed the son of Amaravallan at Kudandai.

(v) We get some important information about the next king Varaguna (II), the son and successor of Srimaran Sri Vallabhan and elder brother of Parantaka Vira Narayana, the donor of this grant. We are informed that the elder brother also continued to be the king when this grant was issued in the 45th regnal year of Vir a Narayana. It clearly indicates that the brother had a joint rule at that time. The elder brother Varaguna is described as one steeped in his devotion to Siva. It appears that Varaguna was at that time only a king in name and the *de facto* ruler was Vira Narayana. Hence, the copper plate quotes the regnal year of the younger brother.

Some scholars identify this elder king with Varaguna, eulogised by Manikkavasaga in his *Tirukkorvaiyar.*[14] The description of this king in this copper plate as the king "meditating on Siva" is taken as sufficient evidence to settle the date of Manikkavasagar as the contemporary of Varaguna II i.e., the later part of the 9th century A.D. Though this is not improbable, there seem to be certain other difficulties in giving such an early date to Manikkavasagar, who on the grounds of internal evidence and other evidences from Saivite literature, is relegated to a later date.

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14 *Pandiar Seppedugal,* intn. Contra B. G. L. Swami's paper in J. I. H., No. 148.

(vi) This copper plate for the first time gives some interesting information about the geneology of Vira Narayana on his mother's side. We are surprised to know that his mother (i.e., Srimaran Sri Vallabhan's wife) was the daughter of Srikanta Chola of Pottappi line in charge of the Tondainadu, the homeland of the contemporary Pallavas. Srikanta is described as a Maharaja-Tondaiyar-kon, Mayilaiyar-kon. Who was this Srikanta and how he could be described as the lord of Tondaimandalam when the Pallavas were ruling over it, are problems which await satisfactory answer. It is possible to identify him with the Telugu Choda king of that name, known to us from the Madras Museum Plates. He ruled in the 9th century and the Telugu Chodas belonged to the Pottappi line.

One important point brought out by this is that the Pandyas had matrimonial relations with the Telugu-Chodas, probably because of their common rivalry with the Pallavas. Hence, the eulogy of Srikanta as the lord of Tondaimandalam in the Pandyan copper plate cannot be taken at its face value. Because of their rivalry with the Pallavas, the Pandyas would not recognise the position of the Pallavas and on the other hand, would praise the Telugu Cholas. Anyway, this aspect needs further consideration.

(vii) The Dalavaypuram copper plates are also important for their account of Viranarayana's exploits which are known to us for the first time. The first victory is stated to be the one gained by him over his elder brother in the battle of Sennilam. Who this brother was, is not known now. He won victories at Kunrai, Pokkarani in West Kongu, Ten-mayal, Venbai, Parantakam etc. He captured Ten-Vilinja-nagar. He destroyed the Kongan at Tenur. He subjugated one Vira Tunga whose identity is not clear. He built numerous temples. He assumed many colourful titles like *Kalippagai* and *Kandarul-kandan* (hero among heroes).

(viii) The copper plate gives some useful information about the village officers, procedure for creating Brahmadeya etc. It is stated that two copper-plates granted by Kadungon earlier were lost during confusion and consequently, the lands were made *kudinilam* i.e., belonging to the ryots. But now, the two villages (Somayajikuruchi and Tirumangalam) were joined and made as one Brahmadeya. This was done on

the suggestion of Narayanan Kesavan, the Padikkaval of the village and a trusted officer of the king.

7. *Sivakasi plates of Vira Pandya :*

Let me now pass on to the other important copper plate, the Sivakasi Plates discovered in 1960. This was issued by Vira Pandya on the occasion of his Brahmadeya gift of a village to a Brahmin Pitambaran in appreciation of his composition of a Sanskrit Prasasti. This was issued in the 3rd year of Vira Pandya (Acc. A. D. 947), while he was camping at the village of Sellur also called Virapandiyapuram.

This copper plate is also of great importance to us as it gives useful and heitherto unknown details on many aspects of Pandyan geneology and history. It introduces new names and relationships. For example, it gives the following geneology.

Tivra kopa
|
Sri Vallabhan
|
Mānakulāsalan
|
Mānābharanan
| (also known as Rajamalla and Tennavarkon-married the daughter of Chera king Ravi)
Sundara Pandya — Vira Pandya

For the first time, we come across the names Tivra-kopa and Mānakulāsalan as the Pandyan kings. It completely omits the names of such celebrated kings like Nedunjadaiyan Parantaka, the father of Srimaran Sri Vallabhan and also the latter's two famous sons, Varaguna II and Parantaka Vira Narayana. The only explanation is that Sri Vallabhan and his father Tivra-kopa are probably identical with Sri Maran Sri Vallabhan and his father Nedunjadaya Parantaka (Varaguna I). Tivra-kopa is apparently another name for the latter. If we have to go by the known geneology of the Pandyas, we have to equate Manakulachala and his son Manabharana with Parantaka Vira Narayana and his son Rajasimha respectively. Even this would omit Varaguna II. This is the one only plausible way of explaining these sets of geneology. But, there is some room for suspecting that the geneology of Sivakasi plate

may represent a collatаral branch of the Pandyan kings. The Dalavay-puram copper plate has informed us that Srimaran's son Varaguna II and Parantaka Vira Narayana ruled the land after defeating their brother whose name has not been disclosed. Could Mānākulasalan of this copper plate, be described as the son of Sri Vallabhan be that person ?

Now, let us turn to Vira Pandya, the donor of this grant and his brother Sundara Pandya who are described as the sons of Manābharana, probably through two different wives. The charter does not speak much of Sundara Pandya, the elder brother. Probably, he predeceased Vira Pandya making his way clear to the throne. It has been suggested that *Sundara Pandyesvaram*, the *Pallipadai*, referred to in the records of Solantalai-konda-Vira Pandya, was named after this prince.[15] The Vira Pandya of this charter can be identified with *Solan-talai-Konda Vira Pandya* who, as the name itself shows, was responsibls for repulsing the early Chola incursions into the Pandyan country during Parantaka's time but who was later beheaded by the Chola king Aditya II who assumed the title *Vira Pandyan-talai-konda Parakesari.*[16] Some scholars were hesitant for this identification. Now I have picked out a very clinching evidence in favour of this. An inscription discovered recently at Anaiyur near Madurai states that Vira Pandya wrested the kingdom and issued certain order from the seat *Vira--Keralan* in his palace called *Manabharanan-tirumaligai* at Mangalyapuram. This inscription supports the Sivakasi plate evidence with regard to his being the son of a Chera princess and his relation with Manabharana. This evidence would help to identify Vira Pandya with Solantalai-konda Vira Pandya. It may also be pointed out that the names Mānābharanan and Sundara Pandya are mentioned in many 10th cen. inscriptions though they have not left any independent records of their own.[17]

15 ARE 1960-61.

16 *Ibid.* But there are some hurdles. His relation with Manabharanan and Sundara are not corroborated. There was one later Vira Pandya. An inscription of Rajendra I refers to the defeat of Vira Pandya and Sundara Pandya at the hands of his son Rajadhiraja I. Here the Vira Pandya's relation with Manabharana and Sundara Pandya are well corroborated and it is possible that Vira Pandya of the Sivakasi plate is the same king. E. I. Vol. XXV ; *Pandiyan Seppedugal.* But this hurdle no longer holds good now because as pointed out earlier above, Solan-talai-konda Vira Pandya's relation with Manabharana is corroborated by the Anaiyur inscription. His being son of Kerala princess is also supported by his throne being called *Vira Keralan.*

17 E. I. XXVIII, pp. 85 ff.

9. *Varaguna II* (Acc. A. D. 862) :

Several important inscriptions of Varaguna II have come to light in the recent years from different parts of Pandya-nadu and also the Chola country. The information furnished by the Dalavaypuram plates has already been given. We will now review the various stone-inscriptions issued in his reign.

Lalgudi record: An important inscription found at Lalgudi in Tiruchi district of Maranjadaiyan alias Varaguna-Maharaja records a gift made by the Pallava king Tellarerinda Nandippottaraiyan who was none else than the famous Nandivarman III (851-73 A. D). This would clearly clinch their contemporaneity.[23]

Thanjavur district: Varaguna's inscriptions found in the heart of the Chola country, clearly prove an interruption in the Pallava supremacy over the tract. About five of his records are available at Tirukkodikkaval and Tiruchchatturai in Thanjavur district. His 11th year record registers a gift of gold by the king for burning lamps in the shrines of Sri, Sarasvati and Ganapati at Tirukkodikkaval.[24] At Tiruchchatturai, the king gave 300 *kasu* as endowment.[25] His inscriptions dated 10th and 11th year have been found at Tirukkattupalli and Niyamam in Thanjavur district. They mention Videlvidugu-Muttaraiyan who was a feudatory of Pallava Nripatunga Varman.[26] Another inscription at Tirugokarnam dated 17th year of Maranjadaiyan mentions a donor by name Varagunavadirayan.[27] All these would prove that the Pandyas under Varaguna II succeeded in wresting the Thanjavur and Tiruchi regions from the hands of the Pallavas. We already know how Varaguna II and his brother Vira Narayanan fought suceessful battles at Kumbakonam, Venbil, Idavai, etc., all of which lie in Thanjavur district.

But this Pandyan incursions did not go unchallenged. Nripatunga made a bold bid to recapture his possesssions. His records appeared in the region soon. His Tiruvadi record would show that Varagnn held

23 ARE 1928-29, p. 66

24 37 of 1930-31.

25 160 of 1930-31.

26 ARE, 1960-61, p. 20

27 311 of 1904.

a subordinate position under him. The Pallavas allied themselves with the Western Gangas and inflicted a crushing blow to the Pandyan forces of Varaguna in the battle of Sripurambiam.

Some more of Varaguna's records have come to light from the Pandyan country from the districts of Tirunelveli and Ramanathapuram. For example, there is one at Dalapati Samudram in Tirunelveli district dated in the 41st year of Maran Sadiyan (Varaguna).[28] At Eruvadi nearby, his inscription dated 43rd regnal year is also known to us.[29]

10. *Parantaka Vira Narayana and Rajasimha*

The inscription of these two kings, father and son, have been found. The records of the former continued to be rare. The copper plate issued by Vira Narayana has been discussed in detail. Besides that, we get a few stray records of his in the Srivaikuntam taluk which are not however very informative. One of them, mentions a number of temple functionaries. They are all Vatteluttu records.[30] An inscription in grantha character on the sluice of a tank at Nilaiyur in Madurai district calls it as *Sri-Vira-Naranan,* evidently called after Vira Narayana.[31]

The exact year of the commencement of his rule is not known. But, the Dalavaypuram plate was issued in his 45th regnal year. Prof. Sastri tentatively gave A.D. 880 i.e., after the battle of Sripurambiam. On Varaguna's defeat, he came to power and, if calculation is made on that basis, 45th year year would be A.D 925 which is impossible. Evidently, his reign ran concurrently with his brother's perhaps starting a little later, and might well have been over by A.D. 900 when Rajasimha succeeded him.

Rajasimha: The inscription of Vira Narayana's son Rajasimha are surprisingly many. It was during his reign that Parantaka Chola invaded Madurai as a result of which Rajasimha had to flee from his capital and seek refuge in Ceylon and lead a fugitive's life in the Chera

28 ARE 1928-29, p. 66-67

29 605 of 1915

30 ARE 1931-32 p. 68

31 ARE 1929-30 p. 74-75.

kingdom. However, quite a few records giving his regnal year upto even 24th, have been found in Pandya nadu. There is one dated inscription in the 3rd regnal year found on the door jamb of the Vishnu shrine at Attur.[32] It records a gift for the Tirunarayana-Vinnagar by his chief or officer by name Vikkiramakamukha — Pallavaraiyan of Kulattur. Another Vatteluttu record of his at Kottainangulam informs that the temple was known as *Rajasimhesvaram* — called after Rajasimha III (Sadaiyan-maran).[33] Rajasimha's inscription dated in his 9th regnal year are found in Vishnu temple at Sinnamanur, Kurralanatha temple at Kuttalam; 10 year at Tenur, 11th and 13th year at Ambasamudram; 14th year at Solavandan, 17th year again at Kuttalam; 19th year at Nanguneri; 20th year at Tiruppudaimarudur and Uttamapalayam; 21st year at Kovilkulam and Sevilipperi; 24th year at Perungulam near Srivaikuntam etc.[34] If his accession is taken as 900 A.D., his 24th year would be A.D. 924 when perhaps the Cholas led by parantaka displaced him and forced him to flee to Kerala, the home of his mother Vānavanmahadevi.

11. Solan-talai-konda Vira Pandya (946—966)

We have already seen in detail the valuable data furnished by the Sivakasi copper plate issued by this king. We will briefly review the information contained in his stone inscriptions, discovered in recent years. During his time, the Pandyas made a recovery and recaptured Madurai from the Cholas, who were at that time engaged with the Rashtrakuta invasion of Chola country. More than 15 inscriptions of his are available now. There are three of his inscriptions found recently on the door jambs of the Airavatesvara temple at Anaiyur, near Madurai. One of them dated in his 10th year states that the king made certain offerings to the deity by whose grace he obtained the kingdom.[35] It is also mentioned that the king issued this order from his seat named *Vira-Keralan* in the palace called *Manabharanan-tirumaligai* in Mangalpapuram. The name *Vira Keralan* might have been given to the seat because Vira Pandya's mother was a Chera princess and the

32 223 of 1941

33 270 of 1927-28

34 S.I.I. XIV, No. 47 to 77

35 ARE 1961-62, pp. 16-17

name *Manabharana-tirumaligai* might be after Vira Pandya's father Manabharana.

From the Anaiyur inscriptions, we also learn of his officers such as Murkha-Vichchadira-Pallavaraiyar *alias* Sattan Tamilan, who figures as the donor. His 4th year record at Pallimadam in Ramanathapuram district mentions that the temple was called Sundara-Pandya-Isvara, evidently called after his brother Sundara Pandya for whom the temple was built as a memorial or *Pallippadai*[36]. The village is called Pallippadai. This corroborates the evidence given by Sivakasi plates.

An officer donor of this grant was Solantaka Pallavaraiyar. From another record we know Kuruvitturai was named a Solantaka-Chaturvedimangalam.

His 5th year record from Kilmathur, Madurai, refers to the erection of a stone lintel named Srikanthesvaram by an officer Tennavan Kandan-Sattan. A flower garden was also endowed and it was called "Solantakan" after the title of the ruler. The officer examined the affairs of the temple and issued certain regulations, regarding the lands belonging to the temple priests (*aganaligaiyars*), drummers (*Uvachchars*) etc.[37] Another record dated 8th year in the same temple contains an eulogy of the chieftain whose full name was Tennavan-Tamilvel.[38] His 15th year record at Perungulam mentions an officer by name Pandimarttanda-Pallavaraiyan. In an inscription of Rajasimha himself the name Pandimarttanda-valandu occurs and as if it might have been a title of Rajasimha. Manavira Valanadu is mentioned as a part of Tiruvaludi-valandu. Manavira might have been a title assumed by a king earlier than Vira Pandya.[39] His 20th year record has been found in the Erichchavudaiyar temple at Ambasamudram. It mentions certain officers like Vikrama-Pandya-Muvendavelan, Cholantaka-Brahmarayan, Tamilvel etc. It mentions a gift to Acharyan Manabharanan Sendan who built this stone-temple.[40]

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36 S.I.I. XIV, No. 79

37 *Ibid*, No. 84 and 85

38 *Ibid*, No. 87

39 93

40 *Ibid*, No. 94

Incidentally, the astronomical data given in the record enables us to fix the date of Vira Pandya's accession more or less exactly as between A. D. 946 and 947. A record of Vira Pandya dated in his 20th year at Salaigramam in Ramanathapuram district informs us that the king was camping at Tiruppalaiyur.[41] *Tennavan-Tāmilvel*, an officer of the king is eulogised for his scholarship in Sanskrit and Tamil. He is described as a minister well-versed in the *Vedas*, *Vedangas*, law, puranas and *muttamil* (the three branches of Tamil learning), *Patanjalam*. He was a native of Kanchi.

Chola Occupation :

In A.D. 962, Vira Pandya suffered a defeat at Sevur at the hands of Sundara Chola (the father of Rajaraja I), who assumed the title *Madurai-konda-Rajakesarivarman*. But again, Vira Pandya's records are found in Pandyanadu not later than his 20th regnal year i.e. A.D. 966. During this year, he was defeated and killed by Aditya Chola, who assumed the title *Vira Pandyan-talai-konda Ko-Parakesari* in the second year of his reign. From then on, commenced the regular and continuous rule of the Cholas over the Pandyan country. Though the Pandyas rose in revolt frequently against the Chola overlordship, the Chola conquest of Pandimandala became complete during the time of Rajaraja I who assumed the title *Pandya Kulaśani*. Pandyanadu was named as *Rajaraja-mandalam*. Inscriptions brought to light in recent years show how systematic the process of "Cholaisation" of Pandyan country took place from street and village name to that of the temples and the province. This will be dealt with in a later context. During the period of Chola occupation, they appointed their close family members as viceroys to be in charge of the Pandyan country and called them as Chola-Pandyas. The first among them was Jatavarman Sundara Chola Pandya, the son of Rajendra I. Next, we hear of three more viceroys — Maravarman Vikrama Chola Pandya, Jatavarman Chola Pandya and Maravarman Parakramachola Pandya. This was the system by which the Cholas wanted to keep their imperial hold on Pandyan territory. They kept Chola regiments at several places like Anaiyur in Madurai taluk, Sermadevi in Tirunelveli dt. By assuming the Pandyan names and titles, they wanted to wipe out all memories of

41 34 of 1946—47

the Pandyas and step into their shoes. But this did not succeed for long. The Pandyas never reconciled themselves to the Chola occupation and we find several members of the line rising from time to time to displace the Cholas and re-establish the Pandyan rule. Quite a few records giving interesting information about them have come to light. A copper plate issued by Jatavarman Sundara Chola Pandya was discovered at Pandavarmangalam in Koilpatti taluk in 1958.[42] It is dated in his 10th year. It is highly corroded. It calls Pandavamangalam as Panchavanmadevi-Chaturvedimangalam. This is the only copper plate charter of the Chola-Pandya viceroys. I shall refer to certain new data about Chola-Pandya viceroys also here.

1. Jatavarman Sundara Chola Pandya :

Mannarkoil was called Rajaraja-Chaturvedimangalam and the temple therein was called Rajendrasola-Vinnagar.[43] Sermadevi was called Nigaralisola-Chaturvedimangalam and the temple therein called *Cholendrasimhesvaram.*[44] Perungulam in Tirunelveli dt. was called Uttamasolanallur.[45] At Arrur-Perungulam evidently a Chola regiment was stationed. A soldier belonging to the regimentwhich was called *Sundara-Solapandyatterinde-palai yeral* gave a donation to the local temple. Three of his records have recently been found at Anaiyur near Madurai dated in his 5th, 9th and 13th year. One of them mentions the existence of Padaitalaivar or heads of regiments — as the authority over the affairs of the temple.[46]

Two Chera feudatories of the Chola emperor are mentioned. Cheramanar Rajasingar built the shrine of Rajendra Sola Vinnagar at Mannarkoil in about A.D. 1033-34. He figures in many other inscriptions too.[47] Another Chera feudatory by name Cheramanar Rajarajdeva figures in the inscription of Mar. Vikramasola Pandya.[48]

42 ARE, 1958-59, P. 16
43 S.I.I. XIV No. 144
44 *Ibid*, No. 137
45 *Ibid*, No. 131
46 Indian Archaeology, 1961-62, p. 82
47 No. 170 (S.I.I. XIV)
48 *Ibid*, 144, 150, 154, 193 etc.

2. *Maravarman Vikrama Chola Pandya*:

The next Chola-Pandya viceroy was Vikrama Chola Pandya, whose 20th regnal year is the earliest date that is available. Why earlier records of his are not available is not clear. It is quite likely that he was a co-regent of his predecessor for nearly 20 years and that he actually governed the Pandyan viceroyalty in his own name for the last five years (20th to 25th year). His records have been found only in the district of Tirunelveli and not elsewhere. Arrur is stated to have been a part of Rajadhiraja-Chaturvedimangalam.[49] Rajadhiraja was the Chola ruler at that time. A captain or *dandanayaga* of a regiment of a battalion by name Parakrama-Narayana is mentioned as a donor in a record from Sermadevi.[50] The circumambulatory of the Sermadevi temple was called *Rajadhirajan-Tiruchurralai.* His records dated in his 25th regnal year are found at Attur, Tiruvelveli district. Why his epigraphs are absent in Madurai and Ramanatha-puram districts is not known.

3. *Jatavarman Chola-Pandya*:

The next viceroy was the son of the Chola king Virarajendra. He was conferred the title of Chola-Pandya and sent as viceroy. His records are only few and they too are to be found in Tirunelveli district. His 24th and 25th year records come from Sucindram.[51] His exact reign period is still not clear. A record of his 3rd year from Sermadevi informs us that he was seated in the palace at Rajendra-solapuram. There is also a mention that he received certain order from the Chola king, *nam ayyar*, directing him to exempt certain lands from taxation.[52] This would show the firm control by the central authority.

4. *Maravarman Parakrama Chola-Pandya*:

The last Chola-Pandya viceroy was Parakrama Chola Pandya who styled himself Maravarman. The only two records of his known to us were found as early as 1916. Nothing has been added to this, later. They are also found only in Tirunelveli district. One of them

49 186

50 *Ibid*, 189

51 S.I.I. XIV, p. v.

52 194

mentions the benefaction made by some natives of Kashmiradesam and Aryadesam who probably came on pilgrimage or settled down. there.[58]

Recovery of the Pandyas :

Jatavarman Sri Vallabha (Acc. A. D. 1120-22)

The appointment of Chola-Pandya viceroys was probably discontinued during the time of Kulottunga I during whose reign the five Pandyan princes made combined bid to extricate the Pandyan kingdom from the Chola yoke. Kulottunga claims to have put them to flight and placed the garrisons in strategically important centres of the dominions. But inscriptions issued by the Pandyan kings begin to appear in certain parts where they had regained control. One such important Pandyan prince, probably one of the "Five Pandyas" referred to above, was Jatavarman Sri Vallabha, whose inscriptions ranging from 2nd to 26th year have been found in large numbers in certain parts of Tirunelveli and Ramanathapuram district. Nearly 70 of his records have been collected by A. S. Ramanatha Iyer and the same published in S. I. I. Vol. 14. His *prasasti* began with the words *Tirumadandaiyum Jayamadandaiyum.* From a recently discovered record from Ambasamudram, we learn that he used another also viz., *Pumadu Punara.*[54] His contemporaraneity with Kulottunga I is indicated by an inscription of Vijayamangalam. Another record gives useful astronomical data on the basis of which K. G. Krishnan fixes his date of accession between A. D. 1120-1122,[55] We get many useful details about him and his reign. A recently discovered record at Anaiyur informs us that he performed the coronation at *Vandamilkkudal* (*Madurai*).[56] His queen Ulagamulududaiyal patronised a *matha.*[57] His son Pillaiyar Sundara-Pandyadeva camped at Solapuram, in Koilpatti taluk, heard the representation made by the Sabha and made a gift of land to the local temple. The temple was called *Sundarapandya-vinnagar* and the village

53 S.I.I. XIV, Nos. 196-197;

54 ARE 1962-63, p. 31

55 *Ibid,* p. vi

56 ARE 1962-63, p. 31

57 S. I. I. XIV, 200 and 248
She constructed the kitchen at Tiruppattur temple.

Sundara Pandya Chaturvedimangalam.[58] But this prince does not appear to have succeeded to the throne. Another son was Manabharana.[59] A record from Nanguneri states that king Srivallabhadeva was seated in the *pallikkattit* named *Pandyarajan* in the Alagia Pandyan hall in the palace at Madurai when he heard a petition for tax-exemption.[60] One record calls the throne as *Kalingattaraiyan.*[61] This is repeated by several records. This would clearly show that Srivallabha was strongly entrenched at Madurai. A record mentions an important minister or Uttaramantri by name Parakrama-Pandya-Uttarmantri which might show that Parakrama Pandya might have been a predecessor or co-regen of Sri Vallabha.[62] His Senapathi was Rajaraja-Vallappa Nadalvar and another minister by name Manabharana-Uttiramantri.[63] A record of his 12th year from Vijayanarayanam mentions his contemporary Venadu ruler Ravi Kodaivarman, whose agent Vasudevan closed a breach in a tank and repaired a channel named after himself *Vasudevapperaru.*[64] A Valanadu came to be called *Sri Vallabha-Valandu* in which was included the Kudanadu.[65] He gave a large endowment to the temple of Alagiamanavala (Saumyanarayana temple) at Tirukkostiyur for a nine day festival, ending with the day of Chittirai which is also the natal star of the the king.[66] His campings in Paganurnadu and his palace at Rajendrasolapuram in Rajasingakulakkil where from he issued an order to the Sabhas for tax-exemption are recorded.[67]

Maravarman Tribhuvana Chakravarti Parakrama Pandya :

He was one of the Pandyan princes contemporary with Kulottunga I. He probably succeeded Sri Vallabha. His prasasti, *Tirumagal*

58 No. 205

59 He is described "nampillai", No. 225. Also see 238; 250

60 206, 223 and 229

திருபுவன சக்ரவர்த்திகள் ஸ்ரீவல்லப தேவர மதுரை கோயிலில் உள்ளாளா அளகிய பாண்டிய கூடத்து பள்ளிக்கட்டில் பாண்டிய ராஜநில் எழுந்தருளித்து........

61 234

62 228 — *Parakrama Pandya Peraru* is also mentioned. Another reeord (236) mentions Kulasekharamangalam.

63 239

64 231

65 232

66 234

67 263 and 264

punara. His 23rd year record at Vikramamangalam quotes the 40th year of Kulottunga I.[68] We have already referred to several indirect references to him in the records of Sri Vallabha. For example 11th year record (A.D. 1131) mentions a channel called *Parakramapandiapperaru.*[69]

Jatavarman Parantaka :

He lived in the latter part of Kulottunga I's reign. His prasasti beginning with "Tiruvalara Jayamvalara........." claims several spectacular victories like defeating the Chera king, conquest of south Kalinga country under Telunga-Bhima, marriage with Kupaka princess (S. Travancore). All these, as Prof. Sastri, rightly points out, were done while assisting the Chola king Kulottunga. A record of Sri Vallabha calls Karungulam near Tenkasi as Telingakulakala-chaturvedimangalam and it may be a reference to this episode.[70] A territorial division called *Parantaka-Valanadu* as well as *Sri Vallabha Valanadu* are mentioned.

Maravarman Sri Vallabhan (Acc. A. D. 1132-33

His prasasti was *Poomagal Jayamagal.* He probably ruled upto A.D. 1182. His inscriptions are found in Tirunelveli district.[71] A record dated in his 31st year refers to his order issued from the office room (*eluthumandapam*) at Varatungadevanallur for instituting a service called Ahavarman-Sandhi on the day of his natal star which was Purattasi. This record has the prasasti beginning with *Jayamadandaiyum.*[72]

Jatavarman Kulasekhara (Acc. 1162 A. D. to 1173)

Son of Sri Vallabha. Prasasti *Puthalamadandai.* Like his father, he was ruling with Tirunelveli as the Capital while his brother Parakrama Pandya was ruling over the northern part from Madurai. He started the first Pandyan Civil war. Kulasekhara sacked Madurai. Parakrama Pandya appealed toSingalam for help. Before help could come to him he was killed and Madurai captured. The Ceylon troops marched forward and succeeded in displacing Kulasekhara and restoring the

68 ARE 1909, p. 29; ARE 1910, p. 32

69 318 of 1908

70 *Ibid,* XXV, p. 84

71 *Ibid,* XXV, p. 84

72 243 of 1939-40; His second year record states that he was seated in his throne *Munaiyadaraiyan* at Tirunelveli (271 of 1927-28.

Madurai throne to Vira Pandya, the son of the dead king Parakarama. Many details of his reign are already well known from different sources including the *Mahavamsa*. Ultimately, Kulasekhara sought the help of the Cholas to drive out the Ceylonese forces and recaptured Madurai. Chola king Rajadhiraja II entrusted Madurai with Kulasekhara. But the Chola king, Kulottunga III, inflicted a crushing blow on the Singalese army and put Vikrama Pandya firmly on the throne. Vira Pandya was defeated. It is said that Kulottunga placed his foot on Vira Pandya's head and dismissed him (*அவன் முடிமேல் அடிவைத்து*). Then Vira Pandya took refuge in Travancore. Thus ended the first war of Pandyan succession, thanks to the Chola intervention. But ironically, this was the last occasion of Chola intervention, for after Kulottunga III, the Chola kingdom was itself ruled by weak monarchs and it was slowly cut asunder by feundatories, who led to its downfall.

Jatavarman Parakrama Pandya :

Though much is known about Kulasekhara, almost nothing was known about his contemporary rival Parakrama Pandya. More recently, two of his inscriptions have been found at Devadanam in Ramanathapuram district.[73] It refers to the fact that original priests of the local temple failed to attend to their duties even after repeated calls and, the king during his camp there, appointed a new man for the duty, by name Mudivalangum-Pandya-Brahmadirayan *alias* Surya Bhattar. This indicident may indicate the general disorder or confusion prevaling in the land.[74] The king also arranged for the renovation of the temple. In the same time, there is also a record of Maravarman Sri Vallabha (Acc. 1133 A. D). One person Nemeli Udaiyan has attested both the records. Sri Vallabha's record refers to even a Parakrama-Sandi. This would show that Parakarama was a contemporary and even co-regent of Sri Vallabha. Apart from this no other new record or additional information about him is available. His year of accession and under what circumstances he came to rule over the northern part of Pandyanadu etc., are still a mystery. It is, however, likely as Prof. Sastri has surmised, he would have been at first loyal to the Cholas.

73 ARE, 1939-40, p. 244.

74 We get a Similar case at Tirupattur where worship in the temple was stopped when the Sinnhalese army under Lankapura Dandanyaka occupied it.

Jatāvarman Vira Pandya :

Son of Parakrama Pandya and a rival of Jatavaraman Kulasekhara I ; made several attempts to dislodge Kulasekhara with the help of Singhalese forces but forced to run away to Trivandrum.

Jatāvarman Vikrama Pandya: (Acc. 1180)

He was the son and successor of Jatavarman Kulasekhara. After ousting Vira Pandya, the Chola king Kulottunga III put him firmly on the Pandyan throne at Madurai in A. D. 1180. He ruled upto A. D. 1190. He was throughout loyal to the Chola king, Kulottunga III and his reign which lasted upto A. D. 1190 was peaceful. A new record of Vikarma Pandya found at Kattarimangalam in Tiruchendur taluk states that the village was renamed as Vikrama Pandya—Chaturvedimangalam and 64 learned Brahmans well-versed in the *vedas* and *sastras* were settled down there.[75] This would show the peaceful times returning, after all the turmoil of civil war.

Second Pandyan Empire :

From now on, the Pandyan kingdom recovered rapidly much of the power and glory that characterised it before the sack of Madurai by Parantaka. Vikrama Pandya was friendly and loyal to his benefactor Kulottunga III. But with the coming in of his successor Jatavarman Kulasekhara (Acc. A. D. 1190) Chola-Pandya relations underwent complete change. " From this time on, almost to end of the 13th century (for about 200 years), the power of the Pandyas attained great strength and expanded as far north as Nellore and Cuddappah; a succession of able and truly distinguished rulers in the main line made the Second Pandyan Empire a real power in the politics of South India in their age. Their successes in war, their patronage of literature and arts and the methods of their rule are amply borne out by numerous records they have left behind."[76] This period of Pandyan ascendency is already well documented. Not only the records of Pandyas but also numerous records of their contemporaries like the Cholas, Hoysalas, Telugu Chodas, Kādavaryars, Sambhuvarayas, Kakatiyas give us a full picture of the times, hardly leaving any major gap to be filled.

75 377 of 1929-30

76 K. A. N. Sastri: *The Pandyan Kingdom*, p. 139

There is no need to dwell on it in detail. I shall only draw attention to any piece of interesting information that has come to light in recent years.

Jatāvarman Kulasekara I Acc. 1190

He was the first great ruler whose rule extended over the districts of Madurai, Ramanathapuram and Tirunelveli. A record from Tiruppattur makes prominent mention of his officers Kandan Aludiyan *alias* Kalavayil Nadalvan and Mummudi Solan Malavar Chakravarti.[77] The former was probably in charge of the regions around Tirumayyam and Tiruppattur. The name Malavar or Malavachakaravarti is interesting and it seems to have been the surname adopted by the chiefs of Sembonmari, who figure in the Singhalese invasion of Pandyanadu. The Singhalese general Lankapura Dandanayaka is said to have captured the fortress of Sembonmari and later on, gave it back to Malava Chakravarti.[78] It may be mentioned in this connection that the throne of Kulasekhara was known as *Malavarayan.* It appears to me that this was contributed or gifted to the king by the Malavarayans.

An inscription of his 3rd year from Sermadevi found in 1964 mentions a gift by the Chera prince Kodai Iravivarman, the brother-in-law (Machunar) of the Pandyan king.[79] Some of his inscriptions are now available from Alagarkoil one of which informs us that his queen was Dharanimuludaiyal. She established the flower garden near the spring on the top of Alagar hill.[80] The king's machchunanar (brother-in-law) by name Viradamuditta-Perumal built a Vishnu temple at Settur in Ramanathapuram district. It was named Serankarayan-vinnagar.[81] Is this brother-in-law same as Kōdai Ravi, the Chera king? Alagapperumal is also mentioned as the king's brother-in-law.

A record of Tirupparankunram informs us that there was a hall called *Kulasekhara-Narasinga-Mandapa,* built by Narasinga, an officer under Kulasekharan. A record of Maran Sundara Pandyan refers to Kulasekhara as *Perianāyanar* i. e., elder brother.

77 16 7, 187, and 188 of 1935-36

78 ARE, 1935-36, pp. 78. 79.

79 Indian Archaeology, 1964-65, p. 57

80 300 of 1929-30.

81 ARE, 1939-40, p. 245

From a record of 13th year from Vembattu and other similar records elsewhere, we understand that land-masurements were revised and fresh assessments made at the instance of Kalavali-nādalvan by the king.[82] A new measuring standard called *Kuditangi* which is 1/4 longer than the older one was introduced and the lands were surveyed by this new standard.[83] The king instituted an endowment for offering to God Kalapiran during the *Kulasekharan-Sandi.*[84] A record of Kulasekhara dated Ś 1134 = A.D. 1212 mentions an officer by name Manābharana Muvendavelan of Kappalur who excavated a chanel called *Tyaganchiriya-peraru* from the Vaigai.[85]

Māravarman Sundara I (Acc. A. D. 1215)

He was a brother of Kulasekhara, who is called *Periyanāyanar.* Many officers like Kalavayil Nadalvan and Malava Chakravarti served both the brothers. Already we know much about his brilliant conquests and other achievements which laid the foundation of the Pandyan hegemony. He turned the tables on the Cholas. He carried fire and sword into the heart of the Chola country, captured the capital (Mudikondacholapuram) and even performed the *Virabhisheka* at Ayirattali. He fully deserved the titles *Sonadu konda,* and *Sonadukonda-mudikonda-solapurathu-virar.* Since he had the good sense to give back the kingdom to the weak Chola, Rajaraja III, he called himself *Sonaduvalangiaruliya.* His records also showed the part played by the Hoysalas on behalf of the tottering Chola kingdom. Vira Narsimha, the Hoysala, even invaded the Pandyan country to prevent the Pandyan incursions. A record of Sundara Pandya (22nd year - A. D. 1239) from Tiruppattur mentions certain individuals who took advantage of the Hoysala intervention and tried to create disorder by breaking into the temple treasury. They were later captured and punished.[86] Another record datable to A. D. 1236 refers to the collection of a special cess from the residents of Ilaiyangudi to be paid to the Hoysala general Mahapradhani Bhogadandanāyaka for immunity against his

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82 *Ibid,* p. 245
83 323 and 329 of 1959-60.
84 341 of 1959-60
85 333 of 1961-62.
86 170 of 1935-36.

plundering raids.[87] It is probable that it was due to this Hoysala intervention that the Sundara returned the Chola kingdom to the Cholas.

His throne named *Malavarayan* at Madurai is mentioned. At the request of Malavarayar, he remitted taxes for the Sundarapandyan-Sandi for the Varagunisvaram temple at Salaigramam in Ramanathapuram district.[88] A record from the Vishnu temple at Tentirupperai records the construction of a mandapa *Jnanasamudra-mandapa* in the name of the king. From this, we know that it was another title for the king. It refers to the setting up of the image of Bhumiparattiyar in the village which was called Sundara-Pandya Chaturvedimangalam.[89] Sundaramurti and Paravainachiar were also installed in the Siva temple in same village.[90] A record from Tiruchi mentions Tirubhuvanamādevi-nallur and it may suggest his queen's name.[91] A record from Tiruppattur gives a long list of the various officers in different regions of Pandyanadu under Sundara. Among them is mentioned Alagapperumal, styled as the king's brother-in-law.[92] Since he also figures as brother-in-law of Jatāvarman Kulasekhara, this provides another proof to suggest that the latter and Maran Sundara were brothers. The other officers mentioned are :

1. Gāngeyan.
2. Aiyan Malavarayan
3. Nartongarayan, the chief of Niyamam in Adalaiyur.
4. Kōdai kandan *alias* Kuralayattaraiyar.
5. Adigaman of Tiruppuranam.
6. Sirrudaiyan
7. Alagapperumal (brother-in-law)

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87 294 of 1949-50.
88 313 of 1948-49
89 284 of 1940-41
90 248
91 323 of 1955-56.
92 176 186 of 1935-36.

8. Mantiri Raman *alias* Pallavaraiyan of Perumanallur in Anda-nadu.
9. Nilagangaraiyan of Sembinadu.
10. Kulasekhara Uttaramantri.
11. Mānabharana Muvendavelan of Kappalur.

Māravarman Sundara II

He had a short reign. During his period, the Hoysala influence increased and with its consequent confusion.[93] His inscription dated 14th year at Nanguneri mentions a battallion called *Iranasingaviran tirinda villigal.*[94] His records mention the following officer Aiyan Malavarayan and Annan Tamilpallavaraiyan of Chakrapaninallur.[95] His thrones were called *Malavaraiyan* and *Pallavaraiyan.* His wife was Ulaga-muludaiyal. Vikrma Chola, the brother-in-law of Mar. Vikrama, is also called brother-in-law of Maran Sundara II—clearly indicating that the latter was Vikrama's brother—a relation[96] which was unknown to us.

Jatāvarman Sundara (Acc. A. D. 1252)

He was the greatest of the kings of the Second Pandyan empire. Under him the Pandyan empire reached the zenith of glory both in the political conquests and cultural achievments. The entire Tamil country and beyond, from Kanyakumari to Nellore in Andhra came under his active control. Malainadu and Kongunadu were also conquered, thus deserving his title *Emmandalamum Kondaruliya Sundara Pandya Devar.* His impartial benefactions to Chidambaram and Srirangam temples are well known. He performed a *tulabhara* and erected a Golden Hall for Lord Nataraja. He covered the tower for Ranganatha at Srirangam with gold and assumed the title *Hema-chandan Raja* and *Koil-ponmeinda-perumal.* He set up images called *koil-ponmeinda-perumal* in different parts of his country.[97] These are well known facts. Some additional information is furnished by the more recently discovered records of his.

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93 K. A. N. Sastri, *op. cit.* p. 158

94 ARE 1927-28, p. 56

95 ARE 1939-40 p, 247

96 ARE 1929-30, p. 27

97 For example at Tiruvendipuram, ARE, 1937-38 p. 75

He built a hall in the Vishnu temple at Alagarkoil. It was called *Koyil-ponmeinda-perumal tirumandapam.*[98] At Srirangam itself he apears to have built another mandapa named *Seranai-venran-tirumandapa.* This was a title he assumed after his conquest over Travancore. The *gopuram* on the eastern side of Sundaresa shrine in Minakshi Amman temple was probably built by him as it is called *Avanivendarama-tirugopuram.*[99] Two other records of Jatavarman Sundara refer to a service called *Avanivenda Raman-Sandi*called after the king but the birth star given in the record viz., *Uttirattadi* does not fit in with Jatavarman Sundara I whose natal star was *Mula.* Nor does it fit in with Sundara III whose birth star was Pushya. So this has to be ascribed to Jatavarman Sundara II (Acc. 1276).[100]

There was some doubt about the identification of the king who bore the title *Ellāntalaiyana-perumal.* A recently discovered record at Tiruvendipuram states that Sundara II set up the image of Ellantalaiyana-perumal in the name of his elder brother (*annalvi*). Sundara Pandya deva. This would show that this title belonged to Sundara I. Maravarman Kulasekhara also had this title.[101]

Jatavarman Sundara probably built the Sundara Pandya gopura of Vishnu temple at Srivaikuntam as attested by a record.[102] Tevapiran Tadan, an influential Vaishnava leader is said to have met king Sundara Pandya while he was camping at Viradavalem in the 2nd year of his reign.[103]

Jatāvarman Vira Pandya (Acc. 1253—1268)

He was a contemporary and co-regent of Jatavarman Sundara. He commenced his co-regency two years after Sundara i.e., A.D. 1253. He takes credit for some of the successes like the conquest of Kongu, Ilam, Vadugu etc. As Prof. Sastri correctly points out, he apparently did all these under the orders and on behalf of Sundara. His inscriptions are available mostly in Pandyanadu, and some in Kongu,

98 85 of 1928-29
99 281 of 1939-40
100 299 and 300 of 1943-44.
101 ARE 1955-56
102 373 of 1959-60
103 *Ibid*, p. 25

of the empire during 13th century and an imitation of the Chola practice of sending out princes of the royal family as viceroys".[108]

Maravarman Kulasekhara was however a powerful monarch whose inscriptions are numerous. By this time the Chola line had ceased to be a power. Jayamkonda-solamandalam is mentioned as the seat of Kulasekhara. Malainadu, Sonadu, Kongu, Ilam and Tondaimandalam are mentioned as his conquests. They were already subjugated, but probably some local uprising caused them to be re-conquered. Hence, his titles *Cheranai-Venra*, *Kollamkonda* etc.

A record of his 35th year speaks of throne *Kachchikku-vachan* in his palace at Viradavalam in Uraiyur-Kurram[109] This palace was also called *Uyyakkondan-Tirumalai*, 4 miles from Uraiyur.[110] Another throne in his palace at Jayamkondasolapuram was called *Kālingarayan*. These are clear proofs that the Cholas had ceased to exist as a power and their towns and capitals became the seats of Pandyan power. This may also indicate the possibility of Maravarman Kulasekhara being put in charge of the newly conquered Chola territory.

A new record from Srirangam datable to A.D. 1277 mentions a donation by the commander of the Pandyan forces that invaded Ceylon. His full name was Matitungan Tanininru-venrān Perumal *alias* Aryachakravarti of Chakravartinalur in Sevvurukkai-nadu.[111] The Singhalese *Mahavamsa* speaks about this Aryachakravarti as the hero of the Pandyan expedition who sacked the fortress of the city of Subhagiri and took away the venerable tooth relic and much wealth.

A very useful record of Kulasekhara from Venugopala temple at Ilaiyangudi speaks of the chieftain Vānadarayar Kalingarayan who constructed a number of temples and established *agraharas* for the memory of his overlord Kulasekhara and his son prince Vira Pandya.[112] The chieftain was evidently a Bana chieftain. The Vānadaraiyar began to gain importance later and several of them named

108 *Ibid*

109 319 of 1950-30

110 242 of 1941-42 — ARE, Part II, p. 248

111 7 of 1936-37

112 ARE 1949-50

Mahabali Vānadaraiyas figure in later records in Alagarkoil, and Srivilliputtur. One of them known as Kulasekhara Mabali Vānadaraiyan figures in the inscription of Kulasekhara.

Jatāvarman Vira Pandya (Acc. 1270-71) and *Jatāvarman Sundara II* (Acc. 1276)

Not much was known about the relationship between these two and Kulasekhara except that they figure simultaneously. Some records found recently have cleared the doubts. From two records, we come to know that Vira Pandya and Sundara were Kulasekhara's sons.[113] One records of the former mentions that he helped in the consequest of Kongu and Ilam.[114] There are two interesting records at Sri Vaikuntam which prove the contemporaneity of Kulasekhara, Sundara and Vira Pandya. A Sri Vaishnava leader Tevapiran Tādar met all the three kings at different places and probably on different occasions for endowments.[115] He met Kulasekhara at his palace at Gangaikondasolapuram in his 38th year, Sundra Pandya at Viradavalan (near Uraiyur) in his 2nd year and Vira Pandya at Kandiyur in his 2nd year. From this we can know Sundara Pandya and Vira Pandya were junior contemporaries and sons of Kulasekhara.

Jatavarma Sundara II is better represented. He ruled between 1276 and 1292-93. He is the "Soundr Bandi Devar" of Marco Polo and Wassaf witnessed his death in Hijra 692.

Māravarman Vikrama Pandya (Acc. 1283 to 1296)

As pointed out earlier, he was a junior contemporary and co-regent of elder brother Kulasekhara. He had titles Bhuvanaikaviran, Korkaikāvalan, Rajakkal Nayan etc. At Tiruvendipuram, a special offering to the temple named *Rajakkal-nayan-Sandi* was performed on Vaikasi month in *hasta* star, probably the king's natal star. Another offering named *Vikrama-pandyan sandi* was performed on the day of *Rohini* being his coronation day.[116] A record from Tayumanavar temple, Tiruchi mentions the formation of a Chaturevedimangalam named

113 ARE, 1949-50

114 *Ibid.*, and also ARE 1935-36, p. 82

115 ARE 1960-61, p. 23

116 ARE 1955-65, p. 7

after the mother of Kulasekhara, Kannudiya-nayaki.[117] Vikrama's wife was Ulagamulududaiyar for whom a service or sandi was instituted at Tirunamanallur in South Arcot.[118]

Vikrama Pandya is credited with having fought successfully with the Cholas on the banks of the Vellaru. We get some details about this battle now. A certain Vanadaraiyan and his sons fought heroically.[119] His throne *Munaiyadariyan* at Madurai and *Melaiyaderaiyan* at Rajendram are mentioned. His 5th year record from South Arcot disrict speaks of a nādu named as Vikrama Pandya-valanadu.[120]

Civil war and the Muhammadan invasion:

Towards the last years of Maravarman Kulasekhara another son, Jatavarma Sundara III become the sub-king, sometime in A.D. 1303 along with his elder brother Jatavarman Vira Pandya who ascended the throne in 1297. Wassaf has recorded the civil war between these two brothers. In this, the old king Kulasekhara was murdered and Sundara Pandya was also defeated. He apparently sought the help of the invading Muslim forces under Malik Kafur, the general of Allauddin. His invasion only added to the confusion. We have the accounts of Wassaf and Amir Khusru about his raids. Another invasion under Khusra Khan has received full treatment in S. K. Iyengar's book *South India and Her Muhammadan Invaders.*

Malikkafur's inroad, as Prof. Sastri observes, marked the beginning of the end of the Second Empire. The northern part of the empire went to the Kakatiyas. Ravivarman Kulasekhara also ran through the entire Tamil counry in 1311-12, soon after Malik Kafur left South India. From then on, the history the Pandyas became the story of progressive decline, ending in the restriction of their sway to protions of Tirunelveli district and towards the close of 16th century in their final disappearance. This Jatavarman Sundara III (Acc. 1303) had the title *Kōdandarama* and he also seems to have issued a coin in

117 *Ibid.*,

118 252-3 of 1939-40

119 270 of 1939-40

120 137 of 1956-57

that name. His record from South Arcot mentions the formation of settlement called Kodandarama-Chaturvedimangalam.[121]

His contemporary and rival Vira Pandya had the title Kaliyuga-raman. His record of 31st year from North Arcot region records a gift by his queen Ulagamuluduaiyar *alias* Kaliyugaraman-*tiruttol-piriyāda-tirunangai.*[122] His record at Madurai mentions his *Tirumandira-olai* officer Tyagavinda-Brahmarajan.[123]

Recently, some inscriptions of the time of the Muslim occupation of Pandyanadu have been found and I will close this lecture by referring to them. In the Rudrakotisvara temple at Velangudi in Tiruppattur taluk there is a record dated in the Hijra 736 and the 736 and the reigning king is called Maharājan Surattan (Sultan). This Hijra year corresponds to A.D. 1335-36. It records gift of land by Uravar to an individual (Munayadaraiyan) for his services to the village during the Msulim invasion (*Turukkar-vanam*). This affords evidence of the disturbed times that followed in the wake of the establishment of Muslim rule at Madurai by about A.D. 1323 (during the time of the Tughlaq). This would also show that the Sultan of Madurai became independent of Delhi by this time. It became so even in Hijra 734 = A.D. 1333-34. The people were aware of the presence of the new ruler and called him Surattan i.e., Sultan who probably was Jalaludddin Ashan Shah, the first Sultan of Madurai.[124]

At Kayalpattanam, a number of Arabic and Tamil inscriptions from tomb-stones datable to 1336 and later (even upto 1496) have been found. The earliest dated in Hijra 737 in A.D. 1336 found on the mosque mentions construction of a Jama Masjid to Sultan Muhamad Jamaluddin and its completion.[125]

Later history of the Pandyas:

The period of Madurai Sultanate, though only brief, was one of turmoil and widespread disturbance. The Pandyan cuntry had witnessed several invasions earlier, by the Pallavas, the Cholas and

121 ARE 1956-57, p. 77-78

122 ARE 1939-40, p. 251

123 279 of 1942.

124 ARE, 1958-59

125 ARE, 1949-50, p. 9.

fight also went down. There is evidence to show that the Sultanate had control over Madurai upto A.D. 1371. Kampana's inscription of this date, records his general Gopanna's victory over the 'Turushkars'. By about A.D. 1377-78, to be sure, all vestiges of the Muslim rule were removed and the Madurai region came under the sway of the newly risen Hindu empire of Vijayangar.

What part the Pandyas played in resisting the Muslim attacks and whether they helped the Hoysalas in their heroic struggle are questions for which no satisfactory answer is yet known. Apparently, there was no co-ordination or concerted action and the Pandyas ploughed their lonely furrow in the extreme south, leaving Madurai to its fate. This heart-rending condition is graphically described by Ganagadevi's *Madurā Vijayam* which says :—

"The temples in the land have fallen into neglect as worship in them has been stopped ... The suburban gardens of Madurai present a most painful sight ... on every side are seen rows of stakes from which swing strings of human skulls strung together. The Tamraparani is flowing red with the blood of slaughtered cows. The Veda is forgotten and justice has gone into hiding ... despair is writ large on the faces of the unfortunate Dravidars."[129] The work also makes a pathetic reference to the Pandyas and their ancient sword which had now passed on to Kampana. It mentions that the Pandyas who held unrivalled sway for a long time lost their power by the curel stroke of fate and so Agastya sent the sword to Kampana. It fell to his lot to undertake the task of liberating Madurai from the yoke of Sultanate and thus fulfilled a task which the Pandyas could not accomplish.

Both, during the period of Madurai Sultanate and later when Vijayanagar occupied Madurai, the Pandyas had their restricted rule in Tirunelveli-Tenkasi region. But it would seem that people in the distant districts did not feel the impact of the establishment of Sultanate in Madurai sometime in A.D. 1330 or deliberately avoided any reference to the Muslim rule and continued to quote the regnal years of the Pandyan kings. The other interpretation would be that the Sultanate's authority was limited to the vicinity of Madurai and the interior and outlying places still continued to be under the different Pandyan

129 K. A. Nilakant Sastri, *op. cit.* p. 242

kings. Thus, the records of Maravarman Kulasekara who ruled between 1314 and 1346 are found at Sirkali in Thanjavur district. His co-regent was one Jatavarman Parakrama Pandya (A.D. 1315-1347) whose records are only few at Tirunelveli, Pudukottai and Thanjavur. The last mentioned king built the western tower and completed in A.D. 1323.[130] Maravarman Vira Pandya (c. A.D. 1334-1380) has left rccords in Pudukkottai area. There were four more Parakrama Pandyas — one who ruled between 1335-52, a second who had his accession in A.D. 1357, a third in 1367 who renovated the central shrine and the *mandapa* at Kuttalam (in 1387) and another Parakrama whose accession took place sometime in A.D. 1334. We hear of a Jatavarman Kulasekhara who probably ruled from A.D. 1395. The records of the last mentioned kings are practically confined to Tirunelveli region. The Madurai region passed on to the hands of the Vijayanagar who gradually extended their sway throughout South India. The Tirunelveli Pandyas became more or less subordinate to the Vijayanagar who, however, recognised *locus standi* of the ancient Pandyan line to continue as semi-independent rulers in the Tirunelveli area. But intermittently, they indluged in the ambition to revive the ancient glory of the Pandyas which, however, did not meet with success. Thus, during the time of Virupaksha II, a Pandyan chief Bhuvanika Vira Samarakolāhala is said to have headed the forces of long-eared men (*lamba karna* or *cherulu potu*) and ran through the Tamil Nadu right upto Kanchi. Bhavanaika Vira's inscriptions are found in the Ekambaresvara temple, Kanchi. But Saluva Narasimha, the general of Virupaksha, came down to the south and expelled the invaders as far south as Rameswaram. This occurred sometime in A.D. 1470.[131]

But for this episode, the Pandyas continued to be in charge of Tirunelveli area owing allegiance to the Vijayanagar kingdom. During Achyutaraya's period, when the ruler of Trivandrum made incursions into the Pandyan territory, the Vijayanagar repulsed them and restored the territory to the Pandyas. Achyutaraya even married a Pandyan princess.[132] The last of these kings lived upto A.D. 1562. In the

130 Kulasekhara Mahabali Vanaryar is mentioned as the uncle of this Parakrama Pandya (ARE : 1936-37, p. 77-78).

131 *Further surces on Vijayanagar History.*

132 Heras, *Aravidu Dynasty*, pp. 113-17.

meantime, the Nayaks of Madurai rosc to importannce. The Nayak governorship was founded at Madurai sometime in A.D. 1533, but later on became almost independent in its authority and even challenged the Vijayanagar kingdom in its last days. By about the middle of the 17th century the Nayak's power spread to the whole of the Pandyan country, including Tirunelveli region.

B. Administrative Aspects

1. *Territorial and Administrative Units:*

Some considerable body of evidence has come up regarding the territorial divisions and administrative units of Pandimandalam. Sri Y. Subbarayalu has brought together some new data on this subject which deserves our attention.[133] The area was first known as Pandi-nadu and only from 13th century as Pandi-mandalam. From the time of Rajaraja I ie. about A. D. 990, it was called *Rajaraja-valanadu*; as *Rajaraja-mandalam* from A.D. 1012 and *Rajaraja-Pandi-nadu* still later. There were about 100 *nadus* in all. Among them were some with suffix of *nadu*, some with *kūrram*, some with *kulakkil* or *ēri-kil*; *Muttam* and a few *Valanadus*. What were these *nadus*? Were they simply administrative divisions? They were probobly at first basic agricultural settlements, nucleating around certain viable areas with common water-source, soil, geographical contiguity etc. For example, Madurai was in the territorial unit called *Mādakkula-kil*, that means a certain tract close to the Mādakkulam tank which took susteennce from the tank had certain common links, which bracketed the villages with a *nadu* or *kulakil*-unit. *Nadu* literally means an area with human habitation and civilization as against *Kādu-(Kadukonru-Nadakki)* and these nucleating habitation zones with viable agricultural community became the various *nadus*, which later on assumed administrative character as well. The territorial assembly was called *Nattār*. The *Nattār* was a group of the representatives of the Vellanvagai landlords i.e., Urar. Being the influential and authoritative group, by virtue of agricultural land-holdings, they were the people usually addressed by the king, whenever a grant was made. Royal communications were addressed to them.

133 I am thankful to Y. Subbrayalu for permitting me to consult his paper "Some reflections on the territorial units in Pandi-mandalam" Paper read in Pandyan Seminar, Madurai, 1971

Their presence was necessary whenever the boundary of the gifted land was demarcated. This view is corroborated by the Dalavaypuram and Sivakasi plates, where it is expressly stated that the gifted land was delimited in the presence the *Nattars* and *Urar*. They also belonged to the Vellala community who formed a cohesive agricultural group tied together by marriage and other common interests. Sometimes the Nattars of several nadus assembled together for common purpose through the assemblies of *Chitra-mēliperianāttar*. An inscription of Jatavarman Sundara calls them as *Nattumakkal* and *Bhumiputtirar* who belonged to the Vellala community as could be seen from their prasastis.[134] They had a corporate existence. They had the name *Chitrameli-perianattar* because of their emblem of plough which they worshipped and adopted as their standard. An inscription describes Vikrama-Pandya as the patron of agricultural community.

The *Nattars* were supreme arbiters over lands of the nadus and the kings had to seek their endorsement for their orders regarding any agricultural undertaking or arrangement. *Valanadus* were there in Pandyanadu even in earlier days, for example, Sri Vallabha-valanadu and Amitaguna-valanadu, Pandi-martanda-valanadu are mentioned in the inscription of Varaguna II and Rajasimha I.[135]

About A.D. 1021, during the time of Rajendra I, the entire Pandimandalam was divided into four valanadus—all called after the Chola kings:

1. Rajendra Chola-valanadu ;
2. Madurantaka-valanadu,
3. Mudikonda Chola-valanadu, and
4. Uttama Chola-valanadu

But this arrangement was only a passing phase. It only lasted upto the time of Kulottunga I.

During the Chola occupation of Pandyanadu, they changed the names of mandalams, nadus, villages, towns, temples and even streets. This process of "Cholaisation" is almost like the present day trend of changing the names according to the wishes of the rulers. I will illustrate this by quoting only one example.

134 ARE 1936-37, p. 77

135 ARE 1921-30, p. 75; S. I. I. XIV, No. 93.

But it must be said that the Pandyas were less fanatical than the Cholas in this race for re-naming the places.

2. *Village Sabhas:*

The *gramam* or Ur was the basic unit of local administration and we get ample evidence to prove that there was a sound system of local administration akin to the contemporary Pallavas and later Chola days. The Manur inscription of Marān Sadaiyan datable to A.D. 800 gives a good picture of the composition of the *Mahasabha* of a Brahmadeya village, its various Committees (*vāriams*), qualification of membership etc., which are very reminiscent of the famous Uttaramerur inscriptions of the Chola days. But this is earlier in point of time and therefore imortant. Prof. Sastri regretted that its full text was not available or published when he wrote his book.[139] But the same is now available.[140] The first important point is that it is called மக்கள் சபை. It was summoned by beating of a drum — *perunguri Sārri* and met at the stated hour in a public place. Membership was regulated by qualifications of property and learning. There was no election as at Uttiramerur but all important property interests were represented on it, "இவ்வூர் பங்குடையார் மக்கள் சபையில் மன்றுடு கிறது".

They wanted that, among the children of the share-holders, only one who is well behaved and has studied the code of law (*dharma*) may be on the village assembly; that shares purchased or acquired as *stridhana* could entitle one only to full membership in the assembly and in no case half or three-quarter member recognised; such purposes should also elect only such qualified men to represent their shares as have studied a whole *veda*; those who do not possess full membership as laid down cannot stand on any committee (*variyam*) for the management of the village affairs; that those who satisfy the prescribed conditions and become members should conduct themselves in a proper way and should not blindly oppose the proceedings by saying 'no, no' to everything and if they did so they would be punished 5 *kāsus* on each item

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139 Sastri, *op. cit*, p 94.

140 E. I. XXII, pp. 9-11. Prof. Sastri himself has later edited this inscription in 1938.

(அன்று அன்று குத்துக்கால் செய்வாரையும் குத்துக்கால் செய் வார்க்கு உறவாயுடனிருப்பாரையும்...)

The purpose of this record is obviously to regulate the membership and the composition of *vāriams*. Probably, all propertied people becoming members made the assembly rather an udwieldy body. Again, proceedings of such a large body were bound to run into chaos at certain stage and hence the drastic rules of conduct.

Another interesting inscription regarding the functionig of the Mahasabha has come to light in recent years from Sucindram.[141] It is dated kollam 403 — A. D. 1228-29. It records the details of the organisation of the groups of Malayala brahmins from Kilkarai and their representatives in the Mahasabha of the village. They were divided into 8 groups (*adaivus*), each belonging to specified houses. The eight members elected from each of the eight houses were authorised by the Mahasabha to assemble and deliberate on matters connected with the temple and the village. They were forbidden from having transactions of any kind in respect of temple lands to their own advantage. In case the of a defaulter, a fine of 12 kalanjus and 5 kānams of gold was imposed and his property could be confiscated by the Sabha.

All Chaturvedimangalams or Brahmadayams had the Sabha. The non-Brahmadaya village had another type of assembly called *Ur* which probably functioned on similar lines. But we do not know much about the proceedings. The *Urar* of Velangudi is mentioned in a record fiom Tiruppattur taluk in the year 1333. It records the gift of land made by the *Urar* to a leader who did meritorious service to the village in times of confusion.[142] Sivakasi plates (10th century A.D) mention that delimiting the village boundaries was done in the presence of *nattar* of Meluvembanadu and *Urar* of Nalapuram. While *Ur* was the assembly of the village (like the Sabha,) the *Nadu* was bigger assembly which had representatives for several Urs and Sabhas. The members of the *nadus* were called *Nattars.*[143] Periodical meetings of the nattars to deliberate on matters of wide interest are recorded.

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141 ARE 1958-59, p. 18.

142 *Ibid,* p. 19, and see 275 of 1941 Tiruchendur insription of Varaguna II describes the functioning of the *Mahasabha* (E. I. XXI p. 101).

143 1960-61, p. 16

Instances of one single assembly functioning for several villages are also available.[144] The officers of the king in the locality always took the assemblies into their confidence while collecting taxes and remitting them. In one instance certain persons were alleged to have not paid their tax dues and forced to sell their lands to the temple. But when the question was re-examined subseqnently by another higher officer and the Bhattas of the assembly, it was found that these persons were not in default. Hence, their lands were ordered to be restored to them.[145]

On the whole, we feel that the village-assemblies were functioning actively in Pandimandalam just like their counterparts in the Chola country. But it should be noted that in point of time the village assembly system was earlier in Pandyan country and hence the fore-runner of the Chola counterparts·

3. Temple Administration

The temple authorties were variously described as *aganāligaiyar*, *Sri Bandarattār*, *Sri Mahesvaras*, *Sri Vaishnavas* (for Vishnu temples) *Mūlaparishad*. In the Kuttalam temple, *Pāsupata perumakkal* are mentioned as managing the the affairs.[146] The *Mulaparishad* was an important body immediately in charge of the temple affairs, receiving the endowments, and putting them to proper use as envisaged in the trust, keep their lands, money, jewels etc., in proper custody and even lending on interest for agricultural and trading purposes — all under the general control of the *Maha Sabha* of the village. Generally, *Mulaparishad* and the *Maha Sabha* find mention as independent bodies, but they functioned often as one unit. A record from Sucindram indicates that Mulaparudai Sabha supervised the affairs of the local temple under the direction of the Maha Sabha. It was an executive body under the Maha Sabha. In exceptional cases, the *Mulaparishad* gave over the management of the temple into the hands of the Maha Sabha.[147] *Mūlaparishads* at Tiruppattur and Tiruttangal temples were functioning actively. Since the temple was the pivot of the social, cultural and economic life of the village, the temple management

144 26 of 1930-31.
145 ARE 1927-28, p. 57
146 S. I. I. XIV, No. 66
147 185 of 1935-36

had considerable powers not only in religious procedings etc., but also in other spheres where the temple had a vital role to play.

4. *Military System :*

A few facts relating to the army organisation and its position in the land may be summed up here. Highest military chief was called *Maha Sāmantan* and he was usually not merely soldier but alse a great scholar and cultured man. Such an example we have in Sāmantan Ganapati and his brother Etti Sattan who were intellectuals and military officers as well. Similarly, Māran Kāri the Chief Minister had a distinguished military career as attested by the Velvikkudi grant. Many warriors came from the Brahmin class also such as Māran Kāri himself (under Varaguna I), Narayana Cholāntaka-Brahmarayan under Vira Pandia[148] and Aryan Charkravarti, the military commander of Maravarman Kulasekhara who had a triumphant march to Ceylon. Parakrama Narayana Brahmasrirajan was a Dandanāyakan (captain of a regiment) under Vikrama Chola Pandya (S. I. I. XIV, No. 189). Similarly, Sridharan Mantri Eiynan was a maha-sāmanta of the Pandyan army. Many top military men who served under Nadunjadiyan Parantaka I came from the Vaidya Kula of Karavandapuram, which was a fortified town with military garrison stationed there.[149] These military people have done many pious benefections like excavation of cave temples of Anaimalai (by Māran Kāri) Tirupparankundram (by Sāmantan Ganapati) etc. They were honoured with titles like *Mūvenda-mangalappēraraiyan, Pāndi-malangappēraraiyan, Pāndimaitamangalappēraraiyan, Viramangalappēraraiyan, Pandi Ilangomangalappēraraiyan.*

Nakkan Pullan was the leader of the Pandyan army during Varaguna II's successful campaign at Idavai. We have already made a reference to the fact that successive members of the entire Pallivelān family served as military officers and commanders under successive Pandyan kings — Varaguna I, Srimāra Sri Vallabha, and Varaguna II.

From this we can know that certain families dedicated themselves to military service and this passed on from father to son and also

148 ARE 1958-59, p. I6

149 K. V. Raman, *Karavandapuram — A fortified Pandyan Town* J. I. H Jubilee vol.

brothers. On the whole, the evidence suggests that military commanders and the army under them were loyal to the ruling king. Usurpation by military leaders so common in Vijayanagar and Muslim period was something unheard of in the Pandyan history. Only the fight between the ruling brothers created confusion periodically. Even in that stage coup or usurpation did not occur. It is a tribute to the loyalty and and discipline of the Pandyan military chiefs.

This fidelity to the master is well illustrated by the two hero stones found at Vilinjam with *vatteletlu* inscriptions. The hero is stated to have discharged his debt (*Senjorrupperunkadan*) by giving up his life for the sake of his master, probably a Pandyan king. A similar hero-stone of Māranjadaiyan records that when the Chera forces attacked Karaikottai, a Ulvīttu Sevaka, Ranakīrti gave up his life (ARE 1958-59, p. 16).

The Pandyan kings seem to have placed military posts and garrisons at different parts of the realm particularly in strategic places. Very often, the regiments also looked after the law and order of certain localities or helped the local officers in the administration. We have already mentioned about the fortified town of Uggrankottai under the charge of certain military officers. Sometimes, certain areas were assigned to a body of army as fief and they were in charge of collecting taxes under the orders of the king. Such regiments were called *Padaikkaranavar.* We have a record of 13th century (Mar. Kulasekhara) from Tiruvadavūr which carries the royal order assigning certain taxes of the locality in favour of the local temple. The order was addressed to the *Padaikkaranavar* who were probably the accountants or executive authority of the regiments stationed there. This village must have formed part of their fief. They were responsible for the payment of taxes due from the village.[150]

At Anaiyur near Madurai, a Pandyan regiment was stationed. The temple records frequently mention the *Padaittalaivars* as being entrusted with the gifts and endowments meant for the temple.[151] Similar instances of the *Padaittalaivars* looking after the temple or

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150 ARE 1962-63 p. 82

151 *Ibid,* No. 506 496-92 of 1958-59 ; S. I. I. V, 451-54 ; E. I. V, p. 44

village administration are noticed at Tiruvidaiyaputtur, Kottar and Sucindram. The reasons for such a system are not clear. The king himself might have made the arrangement or the people themselves would have asked for the portection for their villages and temple etc., especially in certain dangerous times and would have willingly contributed towards the expenses of maintaining the regiment in the village.

Perumpadaiyar and Valangai-māsenaiyar :

Some interesting information has come to light about certain military bodies during late Pandyan time. They were: *Murpērpadai — Valavam Ullitta Perumpadaiyar* and *Valangai māsenaiyār.* It appears that some lands of the village were being enjoyed on military tenure by a contingent of the Pandyan army stationed at Perungulam.

This body *Perumpadaiyar* appears to have had the same corporate existence and status of a village-sabha and was composed of representatives from several regiments and battalions of the army. As many as 8 such regiments are mentioned. They managed the affairs of their contonmen and also the temple whose deity is called their special deity. They had the Captain, *Senāpati,*, a military accountant by name *Padaikkanakku.* The eight regiments are called *Mudalām padai*, *Irandām-padai* etc. Another record mentions the cantonment board as *Arāchinā-yagam.* The *Murperpadai* may correspond to *mummudi dandas* of the Kannada country.[152] A battalion stationed at Nanguneri was called Iranasinga-viron terinda-villigal.

5. *King's Officers*

We will now briefly see the nature of the set up at the head-quarters, about which not much in known. The king was advised by ministers (*mantrins*)[153] and there was perhaps more than one Chief Minister (*Uttaramantri*).[154] In an inscription *of* Mar. Kulasekhara I, one Vānadarayan Kāligarayan is mentioned as *Ekamantrin.*[155] A *Maha-mātra* is also mentioned (S. I. I. XIV, 246). *Senapati* was probably the captain of a battallion, while *Maha-sāmantan* was the commander-

152 ARE 1932-33, p. 69
153 1927-28 p. 56
154 ARE, 1929-30, No. 273
155 ARE 1949-50, II

in-chief of the army. Many important officers of the realm were simply called *Kalingarayan*, *Malavarayan*, *Pallavarayan*, *Munaiyadraiyar*. The king first communicated his orders to them. It may be interesting to know that Pandyan thrones were also called by the same names. The royal office or a secretariat where the orders were drafted was called *eluttumandapa.*[156] The darbar hall was called by different names such as *Alagia-Pāndyan-kūdam*, *manābharanan-tirumāligai* etc.

Tiruvāsal-mudali is mentioned as an officer of the king's household.[157] Similarly *agapparivāra-mudali.*[158] A lady of the king's household by name *Tiruvudaiyal* is mentioned.[159] Certain executive officers who carried out the knig's orders called *Mugavetti* of the *Puravuvaritinaikalam.*[160] The latter seems to have been the highest revenue body akin to our Revenue Board. The head of this board was called *Tinaikala-nāyakam*. *Nadu-vagai-saivōr* were the important revenue officers and surveyors of lands in the nadu who sorted them according to their grade and fixed taxes etc. *Variyilar*[161] were the revenue accountants who kept the details of revenues for each village and *nādu*. The title deeds of donated lands were signed by them. *Mudali* is mentioned as a tax officer.[162] All copper plates of the Pandyas are couched in beautiful Sanskrit and Tamil and many times in the *manipravāla* style, clearly indicating that both the languages held place of high honour. The composers of both were rewarded and respected. The Tamil portion of the Velvikudi grant was composed by Enadi Sattan Sattan, who was also a high ranking military officer of the realm. He was the brother of Sattan Ganapati, the *mahasāmantan* of Nedunjadaiyan Parāntaka. Similarly, Etti Chāttan, a high ranking officer under Srimāran Sri Vallabha was a renowned Tamil poet who came in the line of Sangam poets. Sri Vallabha's son Parantaka Vira Narayana called himself as *Sentamil-kōn*. In his Dalavaypuram grant he paid high tributes to the composers of Sanskrit and Tamil portion

156 243 of 1939-60
157 42 of 1946-47
158 218 of 1929-30
159 275 of 1941-42
160 212 of 1932-33
161 314 of 1949-50
162 94 of 1933-34

and rewarded them "இதற்குச் செப்பேடு வாசகத்தை ஆரியம் விராய்த்தமிழ் தொடுத்த ..." The Pandyan kings considered Sanskrit and Tamil with equal respect and regard. This is evident in all their inscriptions and titles. The beautiful Sanskrit and Tamil equivalents used drive home this point. To cite a few examples :

Solantalai konda	:	Solāntaka
Emmandalamnm-kondaruliya	:	Sakalabhuvana Chakravarti
Ponmeinda Perumal	:	Hemachandanarāja
Gajādhyaksha	:	Anai Olukku
Dramila Maharaja		Tamil Pēraraiyan
Nadu-nilai-nāyakam	:	Madhyastha

The king's love for taking both Sanskrit and Tamil titles is best illustrated in the Dalavaypuram plates. It gives the various titles of Viranarayana such as: Kūdalkōn, Srinikētan, Sri Parāntaka, Gurucharidan, Sentamil-kōn.*

The point to be noted is that a sort of liberal bilingualism prevailed in their administrative documents.

Araiyars were probably of ministers' rank advising the king on matters of welfare activities, endowment etc. There were *Araiyars*, *Pēraraiyars*, *Vijayaraiyars*, *Tennan Tamilvel*, *Tennavan Brahmarayan*, *Pandya Viluppēraraiyars*, *Pāndi Pallavaraiyass*, *Pandya Kongaraiyars*, *Nānji-nādālvān*. They often figures in inscriptions as those at whose request king made certain endowments, or exempted taxes etc. Evidently they were the king's representatives or officers serving in the various regions and advising the king. For example, Nānjinādālvān was in

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*The Sinnamanur Plates of Rajasimha affords eloquent proof for this: It describes the services of the Pandyan kings to Tamil and Sanskrit. It says :

வளமதுரை நகர் கண்டும் மற்றதற்கு மதில் வகுத்தும் உளமிக்க மதியதனு லொண்டமிழும் வடமொழியும் பழுதறத் தாளுராய்ந்து பண்டிதரின் மேன்தோன்றியும் etc., In another context மகாபாரதந் தமிழ்படுத்து மதுராபுரி சங்கம் வைத்தும் etc.

charge of Nanjilnādu. Kongaraiyan might have served in the Kongu-nadu or might have hailed from Kongu-nadu. *Nyyattar* and Nyaya-paripalana-perunderu are mentioned. In was evidently a judicial body.[163] They can be compared to the District Collectors who served as the channel of communication between the king and the nadus. Many aspects of Pandyan administration system remain obscure still. Much work remains to be done in this field.

6. *Taxation :*

Much is already known about the various taxes collected from the people like *Kadamai*, *antarayam*, *uludukkudi*, *pādikkāval*, *tattāra pettam*, *inavari*, *idai-vari* etc. We have heard of *tari-irai*, a tax on the weavers, *panjupili* a tax on cotton or textiles. A tax on pearl-fishery was called *Sālapattevai* collected from the Nattar of Kuda-nadu.[164] Some special taxes like *tulābhāra-vari*, *abhisheka-kāni* are mentioned to have been collected on the occasion of a festival. The king gifted these taxes to the temple.[165] One of the usual ways by which the king showed his benefaction either to a temple or to a distinguished service or a scholar was to make tax-free gift of land. In times of drought, tax exemptions were freely made. Tax evasion was often punished with confiscation of land and property and making it to the local temple. The people showed their protest by migrating to other places.

There are instances of the Sabha expressing concern about heavy taxation. Once, on account of the rise in taxes, the Sabha had to cut its contribution to the local temple. Usually, in any assessment or re-assessment of land tax, the *Nattars*, the *Ur* and the *Sabhā* were consulted and taken into confidence. Land tax was the main source. Only cultivated lands were taxed according to their *taram*. During the time of Vira Pandya (13th century A.D.) on each *ma*, 1/4 *kāsu* and 4 kalams of paddy was levied as tax. [166] Instances of heavy taxation are available. As the villagers could not pay during the time of Maravarman Sundara II, his officer revised the taxes on taxable lands

163 94 of 1933

164 432 of 1929-30

165 Ibid, p. 75-76

166 1936-37, p. 74-75.

after re-surveying with 18 ft. pole, and exempted the uncultivated lands.[167]

7. Land Measuras and Other Measures

There was a good land-survey system. Lands were measured by certain standard - measures like 24 feet *kōl,* 18 feet *kōl* etc., and they were also periodically changed. During the time of Maravarman Sundara I a new lineal measnre called *kudi-tāngi* whicn measured 24 span in length was introduced in the place of the older rod which measured only 18 spans. With this new measure, the lands were surveyed and taxes re-assessed, under the orders of Kalavayil-nādālvan who communicated it to the Nattars.[168]

Again during the reign of his successor Jatavarman Kulasekhara I, the measure *kudi-tāngi* was again increased by 1/4 of its length by the orders of the same chieftain [169].

During Maravarman Kulasekhara's time the measuring rod was called *Arulniti.*[170] Later records mention the measure *Sundara-pandyan-kōl* [171] of 24 feet length and another *Virā-Pandyan kōl* [172] of 18 feet. Thus 18 and 24 feet seem to have been the basic standard though they underwent slight increase or decrease and they were named after the ruling kings.

8. Coins

Though numerous coins have been discovered in Pandyanadu, they are mostly of late period and some non-descript and difficult for classification because of the lack of legends. Particularly, early coins are indeed rare. The rectangular or square copper coins with double fish on one side and the elephant surrounded by the *ashtamangalas* are probably the earliest and they are rightly ascribed to the Sangam period. They are exactly like their counterparts of the early Cholas of the same period. Though they are ubiquitous and found in baskets in

167 715 of 1962-63.

168 1936-37, p. 74.

169 329 of 1959-60

170 48 of 1928-29

171 521 of 1962-63

172 715.

the Vaigai bed, none of them has any legend on them. But variations in their size, shape and the symbols may perhaps indicate the various denominations. The coin *anai-achchu* referred to in the inscription might be a reference to this elephant coin. Some gold coins with fish but without any legend have been ascribed to the Pandyas. From Sangam literature we learn *Kānam*, *kāsu* etc., were gold coins. It would indeed a great discovery if we could find early coins with the Brahmi letters. There is every likelihood of this.

Regarding the Pandyas of Kadungon line, we get a reference to the coin named *Avanipasekharan-Golaga* which was a copper coin issued probably by Srimaran Sri Vallabha who had the title Avanipasekhara.[173] In the records of Varaguna II we get reference to *kāsu* and *palan-kāsu.*[174] Recently, a round gold coin of Varaguna II (Acc. A.D. 862-) has been identified in the collection at the National Museum, New Delhi. It has two carps vertically placed on one side and on the reverse is found in clear bold grantha characters the name-*Sri Varaguna* in one straight line. Varaguna's lavish endowment to the Tiruchendur temple included 1400 gold *kāsus* and his endowment to Ambasamudram included 290 gold *kāsus*. Another record mentions that one gold *kāsu* was one *Kalanju* in weight. [175] There is the other type of gold coins, the Pandya Dhananjaya coins with fish on the obverse and the legend " Sri Pandya Dhanajaya " on reverse in Nagari Characters. It is doubtful if these were Pandyan imperial issues. [176] An early 9th century Pandyan record mentions *dinaras* and *kasus* were endowed to a temple. [177] The *dinaras* were current in Pandyan country in the 14th century also since Wassaf mentions it, as coins of red gold. [178] The early ones were evidently the imported Roman gold coins which were widely current in South India as the one mentioned in Ikshvaku inscription. They were valued for the bullion content.

I have collected from the iscriptions a few variety of coins that were current during the 10th century.

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173 Desikachari, *S. Indian coins*, Pl. III, 65
174 ARE 1928-29, p. 66
175 R. Vanaja, *A Gold coin of Varaguna*, J.N.S.I. XXXII, pt. I
176 E.I. XXI, No. 17
177 R. Vanaja, *op. cit.*
178 K.A.N. Sastri, *op. cit.* p. 192.

1. *achchu*: Referred to in many inscriptions of the 10th century in the records of Solan-talai-konda Vira Pandya.[179] We do not know the value but a later record says 1¾ achchu is equal to 102 panam.

2. *ānai-achchu* — 6th year of Jatavaraman Sri Vallabha S.I.I. XIV No. 212.

3. *Kāsu* or *sempon kāsu* and *panam* (*Ibid*, 533 and 244) From Varaguna's record we learn that 10 *pon* = 1 *kāsu* = 1 *kalanju* of gold (No. 231).

4. *Palankāsu* the old *kāsu* was of greater value. For endowing one or two lamps 3 *palankasus* would do, whereas for the same purpose 1000 current *kāsus* were needed.

5. *Drahmam*; One old *kāsu* = 1½ drahmam. (No. 243)

6. *Kānam* = 1 *pon*.

In later inscriptions besides the general term *kāsus*, *panam*, *palankāsu* etc., we come across the following names.

7. *Pudu kulugai panam* current in Jatavarman Vira Pandya's record at Madurai (273 of 1941-42)

8. *Danapālan-kulugai* — Same king — current in Tirunelveli district (54 of 1944-45).

9. *Anrada narpudu kāsu* — Same king.

10. *Palam-Soliyakkāsu* — Same king.

11. *Vira-Pandyan kāsu* (*Ibid*),

12. *Palamudal-ānai-achhu* — Maran Sundara's time; 22 veli and 6 ma of land obtained for 55 *palamudal anai-achchu* (312 of 1949-50).

13. *Ellan Talaiyāna*

Coins of Jatāvarman Sundara with legends such ast*Kaliyugarāman*, *kachivalangum-pcrumāl* etc., are well known to us. Similarly, later coins with legends like *Samara kōlāhalan*, *Bhuvanaika viran* are also known. The latter was an issue by Maravarman Kulasekhara I. His son Jatavar-

179 ARE, 1958-59, p. 16.

man Sundara III issued the coin bearing the legend *Kodandarāman.* A record dated *kollam* 589 i.e., A.D. 1413, mentions a coin issued by a Tirunelveli Perumal Vira Pandyan named *Nenmeni Kaliyuga Raman.*[180] The place name Nemeni perfixed probably indicates that it was minted at this place. The same coin mentioned in a later record also dates Kollam 733 = A.D. 1558.[181]

Some coins of foreign origin also found their way into Pandyanadu. We have already mentioned about the presence *dinaras* as early as 9th century, if not earlier. The *Drahman* was another. Besides these, the Roman gold and silver coins were possessed for their metal value but never current as coins. Coins from Ceylon were familiar here and they were called *Ilakkasu.* Ceylon Coin *kaha-pana,* issued by Parakrama Bahu was ordered to be current in Pandyan country when the Ceylon king invaded Madurai against Kulasekaran.

Public Works:

Government took interest in fostering agriculture by affording irrigational facilities. This took mainly two forms — either digging a channel from a nearby river or excavating a lake with sluice. Seliyan Sendan excavated a channel and built a sluice.[182] During Srimāran Sri Vallabha's time his general Etti Sattan of Iruppaikudi did extensive irrigation works. He improved tanks called *Tirumāl-ēri, Maran-ēri* in the arid tract.

An officer of Vikrama Pandya dug a channel and built a sluice for it to carry the water from river Pennai for irrigating the lands of Tiruvannamalai.[183]

At Silaiman, near Madurai, an inscription of Kulasekhara dated S' 1134 (= A.D. 1212) mentions that the Manābharana Mūvēnda-vlār of Kappalur, an officer excavated a channel called Tyāganchiriya-pērāru from the river Vaigai.[184]

180 725 of 1962-63; Mint is mentioned as *Karukalattu adikkum panam* ARE 1943-45 p. 60-61.

181 309 of 1963-44:

182 1961-62, p. 82;

183 200 of 1934-35.

184 33 3of 1961-62

An epigraph of 11th century from Kuruvithurai (Nilakkottai taluk) mentions *Parakarama Pandyan Kallanai, Vira-Pandian-kāl, Sri Vallaba pēraru. Parakrama-Pandya Perāru* is also mentioned.[185] Vasudevan (under Srivallabha) repaired the channel and named it *Vāsudevappērār.*

Besides rivers and channels, tank irrigation was widely popular. Madakkulam, near Madurai figures in many ancient records. We hear of *Parāntaka-pērēru* near Uggrankottai. The local sabhas had *eri-variyam* to look after the maintenance of the lake,-strengthening of the bund in rainy days etc.

10. Conclusion:

The foregoing facts are only glimpses of the Pandyan administrative system. There is scope for considerable work in this field, especially because of the epigraphical records are enormous now. But even the glimpses given above give us the impression of the soundness of this administrative system. Though it was a monarchy, it was regulated by code of law and *dharma.* Monarchs were all enlightened and properly advised by the highly educated and cultured Uttara-mantrins. The military generals were not merely soldiers but also intellectuals. The state was not functioning in the ivory tower. There was a continuous dialogue between the administration and the people in whose welfare the kings took a keen interest. The stone records of the times are full of royal concessions, and exemptions, land-donations etc., to various sections of the society and cultured institutions Names like *Madappuram, Pallichandam* (land grant for Jain establishment), *Devadānam. Tiruvidaiyattam* (tax free gift lands to the temples) *Tiruppanippuram* grants for the repairs and renovations to the religious establishments, *kūttu-kāni* (lands assigned to the artistes) *Pulamai-vritti* (gifts for scholars), *Battavritti* etc. would all go to show how the monarchs gave sustenance and encouragment to educational, cultural and religious institutions. They honoured the military commanders with title *Enadi* and gave land-grants. They were constantly in touch with the country side through the sabhas, the Urs and the Nattars without whose endorsement they did not do any drastic changes in the land revenue and other vital matters. There was considerable scope for local self-government by the village assemblies which practically looked after all

185 S. I. I. XIV, No. 223 and 201.

their day to day affairs without external interference and that the assembly not only represented all local interests but also was composed of qualified persons. As the Manur record says, the Sabhas were *Makkal-Sabhai* but regulated by certain qualifications of character and discipline. Similarly, the central Government with the enlightened king at the apex, ably assisted by qualified Uttaramantriṇs, Nādālvans etc., was a source of strength and stability. The Pandyan monarchy was rooted in the popular will of the people. Hardly we come across any tyrannical ruler. Though we do get instances of race for power and a few succession disputes, they are extremely few considering the length of their rule. In fact, in their copper plates, each takes pride in mentioning his predecessor and his achievements in the political and cultural spheres. There is no evidence to show that there was ever a tyrant among the Pandyas. The emphasis was on the welfare and good administration. Stability and efficient administration at the centre and local initiative at the village level and a good co-ordination between these two levels contributed to the success and soundness of the administration. It was an enlightened monarchy with the welfare of the people as its ideal.

LECTURE II

SOCIAL AND CULTURAL ASPECTS

1. FORMATION OF SETTLEMENT AND COLONISATION:

In Pandyanadu, the fertile plains of Tambraparani had attracted haman settlement more than other parts. The next focus centre was on the banks of the Vaigai. Other arid parts of Madurai and Ramanathapuram districts did not afford facilities for any large scale habitation. That is why, comparatively speaking, we do not find such a concentration of the Brahmadeya villages and temples as we get in the districts of Thanjavur and Tiruchi. From the Pandyan records, we come to understand, however, that there was a conscious attempt by the Pandyan kings to attract the Brahmins to come and settle down in different parts of their realm for which they were given lavish Brahmadaya villages, or Chaturvedimangalams, tax-exemptions etc. Similarly, the Pandyan kings tried to attract the trading community also so that commerce would grow. Thurston in his "Castes and Tribes" has recorded the tradition that about Kali 3808 a Pandyan king named Sundara Pandya asked the Chola king to induce some Vaisyas to settle down in the Pandyan country. They settled down in the country north of the Vaigai river, east of Piranmalai and south of Vellar.

An inscription of Maravarman Sundara also mentions the settlement of the Rajanārāyanapuram branch of Nagarattar community.[1]

Brahmadeya:

Several instances of the kings inviting the Brahmins to settle down in different places and giving them lands for the purpose are recorded.

Kattarimangalam in Tiruchendur taluk was ordered by Vikrama Pandya to be called as Vikrama Pandya Chaturvedimangalam and 64 Brahmins well versed in the *Vedas* and sastras were settled down there.[2]

A record of the same king from Tiruppachetty refers to the formation of a new colony of 46 Malayala Brahmins from Malaimandalam.

1 ARE 1935-36, p. 80

2 377 of 1929-30.

This was done because the population of the village had become much decimated and this was represented to the king. He arranged for reorganisation of the village and settling of the Malayala Brahmins of the neighbouring district. For this, the village was marked out, lands measured, necessary channels dug and sluices built and house sites and lands were apportioned to the new colonists. A temple was also built and it was called Malaimandala-Vinnagar Alvar.[3]

A number of *agarams* founded by Jatavarman Sundara (Acc. A.D. 1303) who had the title 'Kodandrama' are recorded. In South Arcot region, lands were sold to the Brahmins, and their agaram was called Kodandarama-Chaturvedimangalam after the king. The lands were purchased from *Bhumiputtirar* or Nattumakkaḷ who had enjoyed the tenancy rights of the village and who were all Vellalas and who formed the body — *Chitramēli* — *Perianāttār.*[4] This example however would show the creation of Brahmadeyas was done with the endorsement of the agricultural community who had the tenancy rights of the lands.

Vānādarayan Kālingarayan, an important minister under Māravarman Kulasekhara I established several *agraharams* at different places and built temples for the memory of the king.[5]

Avanivēndarāman-Cheturvedimangalam in Ayakkudi was formed in the name of the king in Vaigainādu by settling 128 Brahmins. Land was made taxe free.[6]

During the time of Jatāvarman Sundara (Ac. 1261) a new village was founded by clubbing a few together and settling in them a number of Brahmins. It was to be called Sundara Pandya-Chaturvedimangalam. 200 vēlis of lands were distributed to 121 Brahmins who were teachers of *vedas* and also others like the *Vaidya*, accountant, carpenter, black-smith, *uvachchas*, barber, mid-wife, vettiyan etc. Provision was also made for a grazing ground, crematorium etc.[7]

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3 1928-29, p. 68-69

4 1936-37 p. 77-78

5 1949-50

6 1955-56, II.

7 ARE 1958-59, p. 18

Another record mentions the fundation of the villages called Avani-muladudaiyal-Chaturvedimangalam and Bhuvanamulududaiyal-Charurvedimangalam, apparently after the queens of the Pandya kings.[8]

The newly formed villages were around the temple and had facilities of water, cultivable lands etc.

2. Civic amenities in the villages and towns:

Interesting is the reference to street lights on the roads. There were separate streets for different classes of society. *Nānādesipperunderu* would show they were occupied by the merchant class. *Sāliyarteru* is mentioned as the quarters for weavers.

Water-sheds:

A record from Dalapadisamudram mentions the provision made for street lights and also for the maintenance of two persons to look after the water-sheds called *Rājākkar-tannīrpandal* and another called *Munnūrruavperumpandal*, persumably after the guild or regiment of 300 persons. To open water-sheds at convenient intervals along the important highways was a popular form of benefaction in the olden days.

Merchant community:

As pointed out earlier, the early Tamil Brahmi inscriptions themselves contain evidence of merchants and merchant guilds doing benefactions to the monastic resorts. There was a guild at Vellarai near Madurai called *Nigamattor.*[10] In later epigraphs we get very good evidence for the active part played by the merchant organisations like *Nānādesis*, *Manigrāmattar*, *Ainūrruvar* etc. We get evidence of the merchant and artisan people colonising in different parts along the east coast. A 10th century record from Sirudavur in Chingleput district registers donation for a Vishuu temple from a merchant from Pandya-mandala. A 14th century record also refers to the colony of settlers.[11] In Chingleput district itself places like Chintamani, Mylapur, Tiruvot-

8 *Ibid.*

9 1928-29, p. 67.

10 I. Mahadevan *Corpus op. cit.*

11 ARE, 1933-34, p. 35

tiyur, Tiruvadandai, Mahabalipuram, all on the sea-coast were great centres of commercial activity, as could be judged from the inscription of these places. The big temples in the tract could be built and maintained only owing to the philanthrophy of the thriving mercantile population.

Ariviyur near Sivapuri was called Desi-Uyyavanadān-pattanam and it was a place of some commercial importance. There was in it a street named *Nānādesipperunderu.* A number of merchants figure as donors to the local tank here.[12] Early inscriptions at Uggirankottai mention the benefactions to the temple made by the Nagarattar, the pre-eminent merchant community of Pandyanādu.[13] They built a corridor in the local Siva temple and it was named *Nagarattar-Tiruchurrālai.*

A record of Māravarman Sundara (13th century) from Pillaiyarpatti in Ramanathapuram district gives interesting information about the Nagarattar community. It speaks about the origin of Rajanārayanapuram branch of the Nagarattar.[14] It states that the Nagarattar settled in *Ainūrrupperunderu* in Erukankudi and purchased some lands at Marudangudi for founding a new colony called Rajanarayanapuram. It was one of the nine places where the present Nattukkottai Chettiars colonised in the Pandyanādu. The present record gives the approximate date of the colonisation of one branch in the first quarter of the 13th century. The Nagarattars were in charge of a number of temples. They even had the right of collecting certain levies for certain festivals.

On the festival occasion the deity was to be heralded as *Danmadavalavan-tambiran.* Evidently Pillaiyarpatti was one of the 64 *tavalams* or merchant communities who organised themselves as associate bodies of the *Tisaiāyirattainnūrruvar.*[15] We get good many references to this body *āyirattainnūrruvar, āiyrattu-elenūrruvar* etc. They were evidently corporate bodies comprising of leading merchants. The temple at Sivapuri was called *Ayirattainurruva-Isvaram-Udaiyar.*[16] A record of Maravarman

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12 ARE, 1928-29, p, 68, and S. I. I. XIV, 213.

13 199 of 1935-36.

14 ARE, 1935-36, P. 23

15 ARE, 1960-61, p. 23

16 1928-29. p. 68

Kulasekharan I mentions a toll collected on articles of merchandise to the temple by the regional representatives of the great organisations like *Tisaiyayirāttu annūrruvar* and *Chitramēli-perianāttar*. The *manigrāmam* of Kodumbalur was one of them. Other centres of these merchant guilds were Uraiyur, Rajasekharapuram in Malainādu etc.[17] Ayyapolil was another guild that was functioning in Periakulam area.[18]

Prasasti of a merchant guild:

Another inscription of the same king datable to A.D. 1318 contains an interesting *prasasti* of the *Vanianagarattar* in the 18 districts (*Padinen-Bhūmi*) on both the banks of the Kaveri. It claims all mythological associations like the Garuda, their flag, the Pampa, their river, Jayavarman, their elephant etc.[19]

Another record of 13th century from Kiramangalam states that the Nagarattar of several places met and agreed to provide for the daily worship and upkeep of the temple tank called the *Nānādesam* by a levy on their imports. It seems to have been a self-imposed levy for a good cause.[20] Another record from the same place mentions that the mercantile communities *Padinen-Vishāyattār* (of 18 districts) provided for the worship in the temple.[21] Velangudi in Tiruppattur taluk had a merchant colony. It figures in an inscription as Vaniyanagaram and the merchant of the place had even the *padikkaval* rights. A record from this place mentions the donation of a pearl merchant of Kaliyamangalam and his name was Alagianayan-Valai-vīsuvān.[22] For a similar purpose of renovating an old temple in Ramanathapuram district, members of 18 vishayas attended a meeting and among them, were the *Valanjiyar* of South Ceylon, *Anjuvannam* and *Manigramam*, all self regulating corporations of different classes of merchants.[22a]

Social groups:

Regarding the social set up, nothing new need be said. It was essentially an orthodox, conservative set up based on the caste system

17 286 of 1964-65
18 S. I. I. XIV, 251
19 1960-61, p. 23
20 ARE, 1935-36, p. 81
21 *Ibid*, No. 162
22 503 of 1958-59
22a 598 of 1926

with all its good features and also the draw-backs. We get reference, to the well known social groups Valangai and Idangai groups – which were very conscious of their rights and privileges and which represent roughly the agricultural class on one side and the industrial or the artisan class on the other. The constant rivalry between them in later history is well known. They are recorded even in Vijayanagar inscriptions. We do not know about their position in earlier times. They seem to have claimed certain amount of autonomy to have their own rules and regulations of conduct, often defying the king's orders. But the evidence is not so clear in the Pandyan records as they are in the Chola ones. However, a record of Jatavarman Sri Vallabha from Tenkarai (Periakulam taluk) appears to record certain rules framed by them.[23] But the record is fragmentary and hence we are not able to understand its significance. The guild *ayyapoḷil* and its association with the temple is mentioned. We have already made reference to the respectable place of the agriculturists in the society. The merchant community, the artisan classes were also having their recognised importance in the village community.

Sati system :

Sati system which was one of the evils of our social system does not appear to have been prevalent in Tamil country in any appreciable manner. We get indeed only rare instances. The classical instance is of Vanavan Mahadevi, the queen of Sundara Chola Parantaka II who entered fire on the death of her husband. In the *Purananuru*, Perungoppendu, a Pandyan queen is said to have done likewise. But, probably this was confined only to the royal class. The common folk do not appear to have practised it. But in one of the more recently discovered records from Tiruppulisvaram in Tirunelveli Dt. registers a gift of an individual to the deity for the merit of his daughter who entered fire as sati.[24] This is one of the few such rare instances.

Refugee colonies :

We get a few references to certain places called *anjinān-pugalidam* i.e., "asylum for the oppressed" the full significance of which is not known to us. Sundara Pandyanallur near Tellaru in South Arcot is

23 S. I. I. XIV, 251

24 363 of 1959-60

mentioned as one. Such people who probably left their original places out of some fear or oppression, were rehabilitated in the new colonies with some tax concessions. An insciption from Sucindram records the founding of a similar *anjinān-pugalidam* around the temple at Sucindram.[25] Quite likely, the people of the border areas crossed the borders to escape oppressive taxation. But full picture is not available. It might also be due to drought in certain areas, the people might have migrated to better areas temporarily.

Famine :

A record datable to A. D. 1227 informs us that at Ilayangudi there was a famine in the village and in order to relieve the distress, the residents even sold some of the jewels belonging to the temple. In the next year, when normal conditions returned, they restored the ornaments to the deity.[26]

Self immolation :

Another rather repulsive system of self-immolation is recorded in South Aroct region.[27] But it was not popular and was only a rare happening. A male *devar-adiar* of the temple cut off his head and sacrificed his life, probably in fulfilment of a vow on the completion of the *mandapa*, which was long lying incomplete. For this act, some 1000 *kulis* of land was granted as *Udirapatti* to the sons of the deceased in grateful memory of his heroic act of self-immolation. Another type of self-immolation is reported at Tirupparankunram. During the Muslim attacks, some devotees are said to have fallen from the gopura, as a sort of expiation to keep them away from temples. But such instances were fortunately rare.

3. Cultural aspects :

Music, Dance and Learning

We have some interesting details regarding many aspects of cultural life of the people. From an inscription of the 13th century from Attur near Tirunelveli, we learn that there was a theatrical hall

25 474 of 1958-59
26 291 of 1949-50
27 197 of 1944-35

and a troupe of actors and actresses to enact dramas (*nātakas*) on the occasion like *Avani-tirunāl.* Some lands were given as gift to the actors and actresses and such assignments were known as *kūttādu-kāni.*[28] Drama is referred to as *Tirunātakam,* sacred drama, implying thereby that it was with a religious or puranic theme. The hall was called *Alagia-pandyankū dam.* Gifts to the Sāntikūttan and one actress by name Tirumēni-piriyādāl are recorded. A record of A. D. 1425 from Tiruchendur speaks of gifts for dancing girls to do service by dancing during *mahapūja* and *andikkāppu.*[29]

Two records of Māravarman Kulasekhara (Acc. 1268) from Minakshi temple at Madurai speak of endowments of land as *Jīvita* to a musician called Periyan. He was given the title Pandya Vellānai-venra-pāndya-vādyamarayar. Another record speaks of similar grant to eleven musicians of the temple. The names and number of musical instruments used by theme are given as *Vīramaddalam, maddalam, timilai, semakkalam, kasi* and *tiruchinnam.*[30] At Attur, Sāntikūttan is mentioned i.e., one who enacted *Santikuttu,* a variety of dance and stage-play.[31] There was a theatre (*nātakaśālai*) within the palace at Madurai.[32]

Learned people were patronised by lavish gifts of lands and other needs. Varaguna I prided himself as *Pandita-vatsala,* lover of scholars. The number of Chaturvedimangalams, Brahmadayas and Bhattarvrittis recorded in the inscriptions testify to the patronage of the learned people. Gift for scholars is mentioned as *Pulamai-vritti.*[33] Tax exemptions for their lands are recorded. Every king boasts that he created many Brahmadeya and performed so many *yajnas.* Selian Sendan, for example, declares that he performed so many *Hiranyagarbhas, Tulābharas,* etc. Similar claims we get in Velvikudi and other records. These would show also their unshakable faith in the orthodox Hindu rituals. Almost all the Pandyan copper plates were issued in favour of the learned people. The Sivakasi grant was for Vāsudeva-Bhattan in appreciation of his composition of a prasasti in the *anushtub.* The plate

28 444 and 445 of 1929-30

29 365 of 1949-50

30 1939-40, p. 249

31 S. I. I. XIV, No. 237

32 *Ibid,* 254

33 248 of 1929-30

calls Madurai as Tamilkkūdal, clearly supporting the tradition that it was a great seat of Tamil learning — where Tamil poets met, vying for recognition. Srimaran Sri Vallabhan honoured one Etti Sattan with the title *Iruppaikkudi-Kilavan* who was a descendant of a poet who adorned the Sangaphalagai at Madurai.[34] One Sēnavaraiyar figured as an important officer in the 13th century records from Parantaka-nallur. Was he the same as the Senavariyar, commentator of *Tolkāppiam*?[35] The Dalavaypuram plates inform us that the father of the scribe was a Tamil poet named Pāndi-Tamilābharanan. The Tamil portion of this grant begins with the wordsஓங்கு திரைவியன் பரப்பில் which is also the opening line of the Sangam classic *Madurai Kānji* dedicated to Nedunjeliyan. Some of the terms occuring in this copper plates are reminiscent of Periālvar's references to the Pandyas. For example, compare the epithet "கடல் கடைந்து அமிர்து கொண்டு of the plate with கடல் கடைந்து அமிர்தம் கொண்டு கலசத்தை நிறைத் தால் போல் of Periālvar. Similarly, Perialvar's reference to the Pandyas' greatness as "பருப்பதத்து கயல் பொறித்த பாண்டிய குலபதி போல்" is echoed in the inscriptions.

Colleges and Libraries:

Some evidences are available for the existence of some *Ghatikas* or colleges for higher learning. From literary sources we know that Madurai itself was a centre of learning just as Kanchi was. In South India, certain institutes called *Sālais* and *Ghatikas* served as places where pupils were imparted training not only in the ancient lore like the *Vedas* etc., but also certain military disciplines. The well known example was *Kāndalūr-Sālai* in the Āy country, which was a sort of military training college besides imparting other academic studies. Similarly, at Parthipasekharapuram, there seems to have been another institute. In the inscriptions of early Pandyan kings, all important Chief Ministers like Māran Kāri, Māran Eyinin, Sāmantan Ganapati, Sāttan Sāttan were well versed in the military as well as literary and religious pursuits and most of them hailed from Karuvendapuram or Ugkarankottai. It is likely that there was one *Sālai* situated there. There was a College at Kanyakumari

34 334 of 1929-30.

35 *Ibid*, p. 78

named Srivallabha-perunjālai as an adjunct to the temple. It was evidently founded by a Pandyan king or his Ay feudatory. Later on, it was renamed as *Rājarājaperum Sālai* by Rajaraja I. Lands were endowed for the institution as *Sālābhogam.* There was provision for 50 Sattars to stay and study there. (E. I. XXVI, 37)

A record of Jatāvarman from Chingleput district mentions a *Ghatika* at Kāvanur in Sengāttu-Kōttam.[36]

Library :

A record of Jatāvarman Sundara at Chidambaram speaks of a Saraswati-Bhandāram (library) its organisanion and administration under the orders of a chief Pallavadaraiyar. The library was originally formed by a poet Svamideva and now it was expanded. A list of 20 scholars proficient in different branches of learning were employed to copy down in Sanskrit and Tamil and compare and check the manuscripts.[37]

These data clearly show the interest evinced in those times to maintain libraries with facilities for copying important works. One of the works mentioned is *Siddhāntaratnākara* by Somesvara.

We have evidence for another Saraswati-Bhandāra in the temple at Sermadevi and the grant of land for the recitation of the *vedas* and *puranas* therein.

Mathas :

Next to temples, *mathas* or seminaries were centres of religion and learning. They belonged to different sects and affiliations and were recipients of gifts from kings and people. But mostly we get much info.mation about Saivite *mathas.* A rather long epigraph of Māran Sundara II states that the king provided for the recitation of *Tirunjnānam* in the temple at Tirunelveli by as many as eleven *tapasvins,* who were the disciples of several important pontifical heads of *mathas* in South India.[39] They were :—

36 51 of 1932-33

37 ARE 1961-62

38 695 of 1916.

39 427 of 1929-30

1. Vishakanthadēva-Santāna ;
2. Bhattavira-Santāna ;
3. Tiruvārur-matha ;
4. Bhiksha-matha ;
5. Matha at Madurai ;
6. Alagianāyaka-Santan at Tirunelveli.

Representatives of all the *mathas* recited the *Tirujanānamm* which was probably a sacred work of the Siva-siddhanta school.[40]

At Tiruppattur, in the east street adjoining the temple, there was the *Bhiksha-matha*, presided over by Sarvesvara. This is mentioned in a record of Vira Pandya (A.D. 1281).[41] The origin of this *matha* is not known but in later times its connection with pontiffs like Aghora Sivāchārya and Isāna Sivachārya suggest a possible connection with the Siva-Siddhantha teachers of the same name. The *Bhikshamatha* is also mentioned in a later record of the 16th century A.D. in association with Golaki-dharma. The disciples were in charge of some temples in South India including Pandyanadu.[42]

At Aruviyur near Sivapurai (Tirunelveli districst) a merchant constructed a *matha* during the time of Srivallabha.[43] At Tirupparankunram, there was the *Kilai-matha* for which Vikrama Pandya gave some grant.[44] At Tirunelveli in later half of the 13th century, during the reign of Maran Sundara II one Māmāṭṭi of the king constructed a matha called Seyyanampiratti-matha, after her own name. She was probably the queen of Hoysala Somēsvara who was the *mama* of the king. One Tamil Pallavarayar was the local chief.[45] At Tikkurungudi, there was *Kalaiyarkalan-tirumandapam* for which a tax-free land was given as *madappuram* during Jatāvarman Sundara's period.[46] At Sākkottai (Ramanathapuram district), during the reign of the same king there was *matha* presided over by Bhavitachariyar Dakshinamurti for

40 Another reference to this work cf. 463 also.
41 173 of 1929-30, p. 82
42 178 of 1929-30 ;
43 1928-29, p. 68
44 248 of 1941-42.
45 298 of 1940-41,
46 407 of 1954-55

whom the assemblies of village and nadu gave lands as *Tirumadavilagam.*[47] At Madurai, there was one *Bhuvanaikaviran-matha* for which a royal grant for feeding 1000 pilgrims at the rate of 100 daily, during festival days, was given.[48] At Sermadevi, we get some evidence for its association with Kashmir Saivites. Several natives from Kashmir-desam and Aryadesam figure in records.[49] At Kuttalam, *Pāsupata-makkal* were in charge of the temple.[50]

Vaishnava-mathas:

In the 12th-14th century period, quite a few Sri-Vaishnava *mathas* came up in all important centres like Tirupati, Srirangam, Kānchi, presided over by ascetics called Jīyars. Some of them trace back their origin to the times of Ramanuja and some even earlier (e.g. Srirangam). The Jiyars were the custodians of worship and ritual in the temple. It was their duty to see that the *pūjas* were done in accordance with the code laid down by Ramanuja.

At Alagarkoil, there was a *matha* named Tirunādudaiyar-matha for feeding Tridandi-Sanyāsin and Ekāngi Sri Vaishnavas.[51]

There was also another *matha* named *Kulasekhara-matha* in the same temple for which land was given as royal grant.[52]

At Tirukkurungudi, there was the *Tirumangai-matha* for the tridandi ascetics for which tax free land gift was made by a Pandyan king.[53]

At Alvar-Tirunagari, there was the *Arulala-tādan-matha* to provide facilities for scholars. It is stated to have been founded by Tirukkurugur Mahāmunigal (Nammāḷvar) during the time of Maravarman Sundara (13th century).[54] The famous Vānamāmalai-matha came up much later i.e., after Manavala Mahamuni. But mathas

47 52 of 1946-47

48 278 of 1939-40

49 S. I. I. XIV, No. 197

50 *Ibid*, 66

51 277 of 1929-30

52 279

53 355 of 1959-60

54 523 of 1958-59.

listed above were of earlier period. The pontiffs of these *mathas* had their main object in regularising the worship and rituals in the temple in accordance with Sri Vaishnava tenets, of affording spiritual initiation and training to their disciples, in providing facilities of feeding etc., to the scholars and pilgrims on festive occasions. To that extent, they were doing social service besides ministering to the religious aspirations of the people. They were often centres of intellectual and literary pursuits. It was in the *mathas* at Srirangam that eminent scholars like Nampillai, Peria-vāchan-pillai, Manavala Mahamuni were nurtured.

Religion:

Jainism and Buddhism had their limited following in Pandyanadu from the Sangam age. The early caves with Brahmi inscriptions found in and around Madurai and other part of Tirunelveli and Ramanathapuram districs were probably the *pālis* of the Jain ascetics, who performed the Sallekhana fasting for 56 days and finally gave up life. We get a good number of names [55] of these ascetics such as:

1. *Kāniyananta āsiriyar*: Occupied the monastery at Māngulam. Nedunchelian's officer and brother-in-law made gifts to this monastery.
2. Kavuti Iten : Sittannavassal.
3. Ariti of Elaiyan lived at Karungālakkudi
4. Nātan, lived in the dormitary at Kunrattur
5. Kāsapan, occupied the cave at Alagarkoil
6. Cenkāyapan, an ammanan from Yarrūr, lived in the cave at Pugalūr.
7. Cenkāyapan - occupied the cave at Tiruchi.
8. Cantiranti - did penance at Tirupparankunram.
9. Matavirai, the great nun living at Alagarkoil cave.
10. a nun of Sapamita ... at Alagarkoil cave.

All the above names suggest that they belonged to the Jaina faith which laid emphasis on renunciation, fasting etc. But Jainism received rude shock from the Hindu revivalist movement led by Āḻvars and Nāyan-

55 I. Mahadevan, *op., cit.*

mars. All the *Tevaram* hymnists visited Pandyanādu and particularly Sambandar's influence on Ninrasīr Nedumāran gave a fillip to Saivism. Similarly, among the Āḻvars, Nammālvār and his disciple Madhurakavi, Peria-āḻvār and his daughter Āndāḻ were born in Pandyanādu and had a large hand in spreading the tenets of Vaishnavism. Nedunjadayan Parāntaka was a great devotee of Vishnu and his minister Madurakavi (probably Madura Kavi Alvar) excavated a stone cave temple for Narasimha at Anaimalai, in the same hill in which Jains had their resorts. This was symbolic of the triumph of Hinduism over the heterodox religions. An inscription of the 7th century recently discovered at Malayadikkuruchi by Sri K. R. Srinivasan makes a pointed reference to the conversion of a Jain cave temple into a Saiva one. According to him, temple-movement of Hinduism took two forms — either converting the existing Jain caves into Saiva ones or excavating new cave temples. The words used for conversion were *Tiruttivitta, pudukki* etc. Similarly, the inscription of 773 A. D. Tirupparankundram cave also seems to make a veiled reference to conversion of the existing Jain temple for the Saivite one. It states that Sattan Ganapati re-appropriated the cave " திருத்துவித்தது திருக் கோயிலும், ஸ்ரீதடாகமும்...". The term "Tiruttivitta" has rightly been taken as " remodelled ", " corrected " " reformed " or " converted ".

All this would show that Jainism was fast losing its influence and Saivism and Vaishnavism were gaining the upper hand. But it continued to have a limited following among the certain sections like the merchant-class. Many Pandyan kings claim in their inscriptions that they gave numerous (*Enniranda Pallichandam*) endowments to Jain temples. In certain localities or pockets, Jainism continued to flourish with a limited following. A number of their resorts in Pandyanadu have Jain sculptures and inscriptions in Vatteluttu characters of 8th-9th century. A few examples are Anamalai, Kazhugumalai, Aivarmalai, Samanarmalai, Karadippatti, Sittannavasal. All the 8th-10th century Jain settlements also gravitated towards the same areas or hills where the early Jain ascetics lived. The later resorts have *Vatteluttu* inscriptions written below the sculpture of Jain Tirthankara. The most famous Jain teacher was Ajjanandi. Probably, he is the same one who is referred to in the *Jivakachintāmani*. He is mentioned in the newly discovered *vatteluttu* inscription at Arittapatti and also at places at Eruvadi, Uttamapalayam etc.

Sittannavāsal: This was another Jain pocket which continued to flourish even in the mediaeval times. An inscription of 9th century found in one of the pillars of the cave refers to a Jain teacher of Madurai by name Ilam Gautaman (*Madurai-āsiriyar*) made some renovations here. It was during the reign of Srimāran Sri Vallabha (815-862 A. D.)[56]

Samanar hill: Near Madurai, was another Jain settlement about which we get some new evidence now. A Tamil inscription of 10th century near the Jain images mentions a *palli* and the ascetics Gunabhadradēva and Chandraprabha.[57] This *palli* continued to be there even later.

A Kannada record of the 12th century from the same place mentions the Jain teachers, one of whom was Bālachandradēva of Sravanabelagola who belonged to the Mūlasangha.[58] The connection of a Jain teacher of Sravanabelagola, the well known Jain centre of Karnataka with the ancient Jain centre at Samanarmalai near Madurai is of special interest. It mentions other ascetics like Nemidēva, Ajitasēnadēva, Gōvardhanadēva etc.

Tirunelveli district: A Jain temple Nyāyaparipāla-perumpaḷḷi in the Tidiyurmalai at Pulam in Tirunelveli district is recorded. The hill was also called *Jīnagirimalai*. There are some sculptures of Jain Tirthankaras. But later it seems to have been converted into Bhagavati temple.[59]

Iruppaikudi (Ramanathapuram district):

In the 9th century one important chief of Srimara Sri Vallabha by name Iruppaikudi Kilavan built a Jain palli besides Siva and Vishnu temples.[60]

While Jainism showed remarkable adjustability in facing the storm of Hindu revivalism, Buddhism practically succumbed to it. Particularly, the Pandyanādu, not a trace was to be found. But in

56 325 - 326 of 1960-61;
57 242 of 1950-51.
58 244 of 1950-51;
59 1939-40, Pt. II
60 1929-30, p. 71.

the Chola country places like Nāgapattinam, Bhūtamangalam, Kaveripumpattinam etc. there were atleast stray Buddhist colonies. There was the famous Sulāmani-vihāra or Rājarāja-perumpalli, established by the Sri Vijaya king and also patronished by Rājarāja. But his son Rajēndra was rather hostile to it. We do not hear much about it later.

Recently, in a Pandyan record of 15th century from Nagapttinam, we get some interesting data about this famous Buddhist colony. It records the gift of some lands belonging to Siva temple for the renovation (*Tiruppani*) of Rājarājaperumpalli *alias* SriMāhasvara-perumpḷḷi.[61] From this, it appears that the old Buddhist establishment had been converted into a Saivite one by this time. The other interpretation would be that some lands belonging to the Siva temple were gifted for the renovation of the ancient Buddha paḷḷi.

Apart from this, we hear next to nothing about Buddhism.

Saivism and Vaishnavism :

The patronage and encouragement given to those two wings of Hinduism by the Pandyan king hardly needs any emphasis. They extended the whole-hearted and impartial support to the Vedic religions from very early days. They had a long tradition as champions of Vedic religion. Even the Pandyas of the Sangam age claim the performance of yāgas (e.g. Palyāgasālai Mudukudumi Peruvaludi). When the Kalabras occupied Pandyanādu and disturbed the existing religious conditions, Hinduism received a set back. But again with the coming of Pandyas in the 6th-7th centuries, the Vedic religion regained its place of honour with added vigour. The Velvikkudi grant gives beautiful expression to this: "... வேள்விச் சாலை முன் நின்று வேள்விக் குடியயென் றப்பதியைச் சீரோடு திருவளர் செய்தார். The Kalabras cancelled all concessions and land grants given to the Vedic people by the early Pandyas and the later Pandyan kings restored them to all their original donors. Not only this. In every grant they prided themselves in saying that they performed the Vedic rites like the *Asvamedha*, *Hiranyagarbha*, *Vājapēya* etc. This can be seen in Selian Sendan's Vaigai

61 290 of 1963-64 ; p. 26.

bed inscription also. Maravaram Sundara I gives expression to the same ideal in his *meykirti* wherein he says that he encouraged

மூவகை தமிழ் முறைமையின் விளங்க
நால்வகை வேதமும் நவின்றுடன் வளர
ஐவகை வேள்வியுஞ் செய்வினை யியற்ற
அறுவகைச்சமயமும் அழகுடன் திகழ
எழுவகைப் பாடலு மியலுடன் பரவ ...

This sums up their ideals and aspirations.

Their impartiality between Saivism and Vaishnavism is seen in all their copper plates which usually begin with the invocatory verses to Vishnu, and end with a tribute to Lord Siva. Particularly, among the early Pandyas there were both followers of Saivism and Vaishnavism. While Ninrasīr Nedumāran was a Saivite, Nedunjadaya Parāntaka i.e., Varaguna I called himself *Parama Vaishnavavanum tānāgi*. Similarly, Srimāran Sri Vallabha, the contemporary of Periālvār was a Vaishnava while his son Varaguna II was a devout Saiva. His brother Parāntaka Vīra Nārāyana was possibly a Vaishnava again. We get the impression that sectrarianism had no place in their conception of Hinduism. The lavish patronage to the temple of both denominations testify to their electic outlook. Even the tinge of fanaticism that was seen in some of the later Chola kings is not seen here. The later Pandyas of the Second empire were most of them Saivites but extended their patronage to all temples. Jatāvaraman Sundara's benefactions to Srirgangam and Chidambaram are historic and are too well known. Minakshi Amman temple Madurai, Nellaiappar temple, Tirunelveli, Jambukesvaram at Tiruchi, Chidambaram temple among the Saivite temples; Srirangam, Alagarkōil Srivilliputtūr, Aḻvār Tirunagari among the Vaishnava temples, received ample patronage.

Their patronage took place in many ways; huge land grant, tax examption, institution of *sandis*, renovation of existing temples and most important, construction of huge towers or gopuras and mandapas which remain to this day as magnificent monuments of Pandyan art. *Avanivēnda Rāman-Tirugōpuram* in the Minakshi temple, *Sundara Pāndya gōpuram* at Cidambaram, *Tirunirru gōpuram* at Jambukesvaram are outstanding examples.[62] At Alagarakōil, Jatavarman Sundara

62 1937-38, p. 96.

built a *mandapa* called *Kōyil pon-meinda-perumal-mandapa.*[63] At Srirangam, he built the *Sēranai-venrān-Tirumadapa.*[64] Kil-chitrai vidi in the same temple is called *Kaliyugarāman tiruvīdi.*[65] Sundara Pandyan-Tirumandapam at Minakshi temple.[66] A gopura of the same name is mentioned at the Vishnu temple at Srivaikuntam.[67] A number of *Sandis* or offerings on the birth days of the kings are known : At the Vishnu temple at Sivaramangai, Jatāvarman Kulasekhara instituted a service named *Kulasekhara-Sandi* on his birth star.

Avani-vēnda-Rāman-sandi in Minakshi temple instituted by Jatavarman Sundara II on his birth star Uttarattadi; Sundara I on his natal star Mula and Sundara III on his birth star Pushya.[68]

Rājakkal-nāyan-Sandi performed at Vishnu temple Tiruvendipuram on Vaikasi-hasta, the birth-star of Māravarman Vikrama Pandya (Acc. 1283). He performed another on his coronation day Rohini and called it *Vikrama-Pandyan-Sandi.*[69]

The Pandyan queens did not lag behind in this race for benefections. We get a reference to *Ulagamuludaiyāl-Sandi* in the temple of Tiruvannāmalai (South Arcot) during the time of Vikrama Pandya (1283). Vira Pandya's queen gave valuable presents to Siva temple at Tiruvattiyur (in North Arcort) such as gold ornaments like the *pattam, Ganga* and the cresent to Natarāja in her own name.[70] Another form of encouragement was by setting up the images of the deity and also the saints like the Nayanmars and Alwars. In one of the more recently found inscriptions, we get a refrence to the installation of the image of Tiruppurumturai-Aludaiyar in the temple of Tirukkodika.[71] During Maravarman Sundara I's reign the image of saint Sundaramurti and his consort Paravai-Nāchiar were installed in the Siva temple at

63 ARE 1928-29, p. 69-70
64 28 of 1937-38
65 98 of 1936-37
66 285 of 1939-40
67 379 of 1959-60.
68 1958-56, p. 7-8
69 247 of 1955-56
70 252 253 of 1939-40, Also 177.
71 54 of 1930-31

Tentirupperai.[72] In the Vishnu temple in the same place a mandapam *Jnānsamudram* in the name of the king was built and the image of Bhūmipirattiar was set up.[73] In the Siva temple the image of Tirukkamakōttattu-Āludia Nāchiar was consecrated. At Sakkottai, the image of Tiruvīdi-nāchiar, probably the *utsava* image of Goddess was set up.[74] These instances may incidentally corroborate the view that separate shrines for the Goddess in all our templess was only a later development. Most of the ancient temples both Siva and Vishnu are called only after the presiding Lord. Even the famous Minakshi temple was known in *Tevaram* hymns and the inscriptions as Tiru-ālava-udaiyār temple.

In the Siva temple at Ariyur in Lalgudi, the image of Subrahmania was set up by one Nachchinārkkuniyaān of Dipangudi near Tiruvārur (in the reign of Jaṭāvarman Sundara). From a record from the Vishnu temple at Nānguneri, we infer that Saṭagōpa i.e., Nammāḷvār was already deified. At Alvār-Tirunagari also, the birth place of Nammālvār, the dscription refers to him as Tirukkurugūr-māmuni.[75] From the records of Srivilliputtūr temple, we come to know that Periālvār and his foster daughter Āndāḷ were deified and their huymns *Tirupallāndu* and *Tiruppāvai* were recited. Āndāl is referred to as Sūdikkodutta Nāchiār. We get reference to the recitation of *Tiruvāymoḷi* also called as *Satagopanpāttu*. In fact a late Pandya rccord is completely composed of the words and phrases taken from *Tiruppāvai*.[76] The image of Emberumānar or Rāmānuja was set up at Srivaikundam temple during the time of Mar. Kulasekhara (13th Cent) At Mannarkoil there was the *Nālāyiravan-tiumandapam* where *Tiuppavai* was recited. A dasar from Kerala set up the shine for Kulasekhara Alvar in the same place.[77]

Recitation of some of the sacred works like *Tiruvempāvai*, *Tiruchāḷal*, *Tirunjñānam* are mentioned in the 12th century records. A record

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72 288 of 1940-41

73 284

74 55-56 of 1946-47; Amman Shrine founded at Sivapuri (69 of 1228-29).

75 21 of 1927; K. V. Raman, *Ep. Gleanings* on *Sri Vaishnava Achāryas*, Prof. Sastri, Fel. Vol. 1971.

76 379 of 1959-60.

77 397, 400 and 402 of 1916.

from Siva temple, Nanguneri dated in the reign of Māravarman Sundara I mentions the recitation of *Tiruvempāvai.*[78] In the regin of Sundara II in Minakshi temple provision was made for recitation of of Tiruvcmpāvai in *Sādārippan* in Margali.[79] The identitification of the work *Tiruchāḷal* mentioned in a record of A.D. 1135 in a Ṣiva temple is not known.[80]

Architecture and Art :

The monuments of the Pallava kings had engaged the attention of the scholars for a long time and now a fairly reliable account of the architectural evolution of the Pallava monuments is available to us.[81] But some how the Pandyan monuments have not received adequate attention mainly because of the lack of dated inscriptions. For example, we have no record comparable to the famous Mandagapattu inscription of Mahendravarman clearly proclaiming the hearlding of a new era of stone-architecture in Tamil nadu. Till recently, with the available data the earliest Pandyan cave temple could not be dated before A.D. 770 — the Narasimha cave temple at Anaimalai of Nedunchadyan Parāntaka I. But the discovery of the Sēndan's (A.D. 654-670) inscription dated in his 17th year at Malayadikkurichi pushed the date of rock architecture in Pandyanadu by nearly a century earlier. The date of the record is A.D. 671. But even this date is atleast 40 years behind the pionering work of Pallava Mahendravarman I. Nevertheless, it is an important land-mark in the history of Pandyas in more than one ways. Sri K. R. Srinivasan who discovered the inscription in 1957, had discussed the importance of it in one of his recent papers.[82] According to him, this signifies the era of stone temples in Pandyanadu in the wake of the new Hindu renaissance movement that took place in Tamilnadu under the influence of the Alvars and Nayanmars. This is emphasised in the word Kaṟṟirukkōyil (கற்றிருக் கோயில்) that occurs in this record. We are already familiar with

78 ARE 1927-28 p. 56.

79 Ibid, p. 60.

80 1907, p. 76

81 K. R. Srinivasan, *Cave Temples of Pallavas*; *Ancient India* No. 14; K. V. Sundara Rajan's papers on Rajasimha Temples.

82 I am thankful to K. R. Srinivasan who has permitted me to consult his paper submitted to Pandyan Seminar, Madurai, 1971.

Mahendravarman's claim that he was the first to make temple out of stone for the Hindu Trinity. So, the significance of the word "Kal-tirukkōyil" in Sendan's record can be appreciated in this context. I would like to draw the attention of the scholars to another slmilar reference in the Anaimalai cave of Madura Kavi or Māran Kāri (A.D. 770). It refers to the temple as *Silāgraham* and *Kaṟṟali*, stone-house for Lord Vishnu. This temple movement went hand in hand with the Bhakti movement. The latter advocated the archa-form or image-worship and the temple-movement gave concrete expression to this idea in immortal stone. In the Pandyan country, in the first phase of this stone architecture, we have a series of *Kaṟṟalis* in the form of cave temples. To cite only a few examples :

Malayadikkurichi cave	(A.D. 670-71)
Anaimalai cave	(A.D. 770)
Tirupparankundram cave	(A.D. 773)
Aivarmalai cave	(A.D. 870)

the cave temples at Pillaiyarpatti,[83] Tirumayam, Tiruchendur, Kunrakkudi, Tirumalaipuram, Jain cave temple at Sittannavasal, the Subramanya cave temple at Kalugumalai; the Tirunandikarai cave in Kanyakumari district etc.[84]

In fact, the cut-in cave temples of the Pandyan country far outnumbered those of the Pallava territory. But in point of time and style, their seems to be atlast one generation gap between the two. In A.D. 670, the Malayadikkurichi cave was still in simple mandapa type of Mahendravarman style. By this time, Pallava Narasimhavarman had gone a step further in producing those beautiful caves with lion-based pillars and the *hara* of miniature shrines on the *prastara*, as at Mahabalipuram. But the Pandyan cave temples have their own individuality in the arrangement of shrines and deities within their cave. The lower rock-cave at Tiruchirapallai and Tirupparamkunram cave are outstanding examples where we have a full array of sculptures of Vishnu and Siva on either side face, and in the back wall the sculptures

83 I. Mahadevan and R. Nagaswami would, on the basis of palaeogrphy of Pillaiyarpatti inscription date the cave to 5th 6th centuries *Contra* J. I. H. XLV p. 48.

84 H. Sarkar, *Manappadu cave, Damihca I.*

of Ganapati, Durga, Subrahmanya and sometimes Jyestha are portrayed.

The next stage in the temple-evolution viz., the cut out temples or rathas, so very popular at Mahabalipuram was almost not gone through by the Pandyas. We have only one solitary example of a *ratha* viz., the Kalugumalai Vettuvān kōil. But the mode adopted is different from that of the Pallavas. Here, the hill temple stands in the middle of a trench, cut out on all sides from the hill. This process of enterning and cutting out the temple was not practised by the Pallavas but we have examples at Ellora.

Structural temples:

Structural temples were fast becoming the order of the day in Tondaimandalam and also the Chola territory. The Pandyas did not go through the ordeal of cutting out rathas. A number of beautiful structural temples came up quickly and the Pandyas took the tide on its crest. There are references to the conversion of brick temples into stone ones. From 9th century onwards, a series of medium sized stone temples were built both by the Pandys and that Muttarayans. Some of outstanding examples are: Vatapatrasāyi temple, Srivillipputtur; Varagunīsvara temple, Radhapuram; Siva temple at Ambasamurdram; Tiruttalisvara temple, Tirupattur; the Vijayanārāyan temple, Nanguneri; Tiruvālisvaram temple, Erichchavudaiyar and Tirumulanathaswami temples at Ambasamudram, Lakshminarayana temple Sinnamanur, Tirunārayana-vinnagar temple at Attur etc. Some of the earliest temples have undergone renovation in later times. But some are intact. The Alagarkoil sung by Periāḷvār Andal and Nammalvar has evidently been renovated later. Its sanctum has a peculiar elliptical shape.

The apsidal temples so popular in Tondimandalam in the Pallava and Chola days, was almost non-existant in Pandyanadu. This would show that it was essentially an influence from Andhra and Deccan which did not influence the Pandyan country. On the other hand, they practised and experimented with the other peculiar type of vimanas popularly ealled the *ashtānga-vimāna*, akin to the Vaikuntaperumal temple at Kanchi and the Uttiramerur temple. We have two good temples in Pandya nadu — one the Saumyanarayana temple at

Tirukoshtiyur and another the Kūdal-alagar temple at Madurai. The latter seems to have been renovated in the Nayak days.

The early structural temples were of modest size but possess good finish and restrained beauty. It has been pointed out by K. V. Soundara Rajan that in extracting granite blocks and building temples out of them, the Pandyas were ahead of the Pallavas who were only working with soft rock, sandstone. All early structural temples of the Pallavas were in sandstone whereas the Pandyas showed their mettle on a tough rock. This tradition, they carried on further in Subsequent times.

Later Phase:

During the Chola ascendency in the Pandyan territory, a number of temples were built which act as links between the first and the second phase of the Pandyan rules. The kings of the Second Pandyan Empire gave importance to the outer *gopuras*, the *prākaras* and the mandapas. With them, a new epoch of constructing huge temple complexes on a grand scale started. The existing ancient temples underwent amplification and expansion. Outstanding examples: Minakshi Amman temple, Madurai; Nellaiappar temple, Tirunelveli; the temple at Tenkasi etc. The eastern tower of Sundaresvara shrine was built by Avanivēnda-Rāman and the Melagopuram by Jatavarman Parakrama-Pandya (14th century). Mar. Kulasekhara I constructed the long corridor (*Tiruchchurrur-māligai*) around the main shrine at Tirunelveli.

With the temendous expansion of Pandyan hegemony spreading over the whole of Tamilnadu, Pandyan architectural activities crossed the traditional boundaries and over-flowed into the Cholamandalam and Tondaimandalam. Thus, came up the Pandyan *gopuras* at Jambukesvaram, Srirangam, Chidambaram and Tiruvannamalai.

We can also say that the practice of preparing tall multi-faceted pillars having life-size sculptures was also a Pandyan contribution, which the Vijayanagar and the Nayaka artisans adopted and developed. Such an example is found at Nellaiappar temple, Tirunelveli and also at Tenkasi and Alagarkoil.

Beautiful examples of early Pandyan sculpture can be seen at the Tirupparanukunram cave with Vishnu, Durga, Jyeshta, Ganesa and the

beautiful Nataraja at Narasimha panels and also at Subrahmania cave at Anaimalai and the Vishnu temple at Tiruttangal. The Vettuvan Koil Sculptures are masterpieces of Pandyan art. They are bold and majestic and at the same time possess natural beauty.

Bronzes :

Not much attention has been paid to the bronzes of the Pandyan country. But quite a few marvellous pieces like those of Sri Rama group at Kūdal-Alagarikoil, Madurai, are of great beauty; similarly are the deities at Tirumohur, Alvar Tirunagari, Srivankuntam etc. Much work is called for in this field.

Paintings :

The Jain paintings at Sittannavasal may more justifiably be called Pandyan and were probably done during the time of Srimaran Sri Vallabha (9th century), when some renovations were done to the cave by Ilam Gautaman, the Jain teacher.

The caves at Tirumalaipuram and Tirunandikkarai in Kanyakumari district retain some Pandyan paintings. All the Jain sculptures of mediaeval times like those at Anaimalai, Alagar-malai, Kilavalavu etc., were once fully painted. Now, some traces of green and red colour are alone visible. Recently, similar paintings were noticed on the Jain image at Arittapatti. A systematic search aided by colour photography of the existing vestiges of paintings would be useful.

Conclusion :

Thus, the contributions of the Pandyas constitute an important chapter in the annals of South Indian art and architecture. Not only in the quantity of output but also in the intrinsic qualities of beauty and magnificance, the Pandyan monuments stand out as great land-marks recalling to our minds the long and arduous vicissitudes through which the art tradition and art-impulses of the Tamils passed from age to age and reached the acme of glory during the middle of the 13th century A.D. In the realm of sculptural art and paintings too they have left behind a rich legacy which formed the base and source of inspiration for the Vijayanagar and Nayak artists.

APPENDIX

1. *Brahmi Inscription Mentioning Nedunchalian, Māngulam, Madurai Dist.*

கணிய் நந்த அஸிரிய் இகுவன்கெ தம்மம்
இத்த நெடுஞ்சழியன் பணஅன் கடலஅன்
வழுத்திய் கொட்டுபித்த பாளிய்

Kaṇi — y — nanta āsiriy — ik — uv — aṉ kē dhamman
itta — a netūñcaḷiyan paṇa — an Kaṭalan
valutti — y Kottūpitta — a — pāḷi — iy

Translation :

Dedication (dhammam) to Kani — y nanta, to the monk (asiriyika), (living) yonder (uvan)

This monastery (pāḷi — iy) was caused to be given (by) Katalan Valutti — y (an) officer (or servant) (under) Neduncaḷiyan[1]

2. *Arittapatti Inscription* (Madurai District).

நெல்வேலிய் சழிவன் அதனன்
வெளியன் முழகை கொடுவன்

Translation :

Chaḷivan Atanan Velian of Nelveli gave (or offered) the Cave.[2]

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1 I. Mahadevan, *Corpus of Tamil Inspcriptions* (1968)

2 K. V. Raman and Y. Subbarayalu, *A New Tamil Brahmi Inscription*, J. I. H. XLIX (1971) The reading has been revised here in the light of a closer examination of the record recently.

J—11

3. *Pandya Chendan's 50th year inscription at Madurai*[1]

பாண்ட்[3]ய குலமணி ப்ரதீ[3]பனாய் ப்ராது[3]ர்பா[4] வஞ்செ
ய்து விக்ரமங்களாலரைசடக்கி மறங்

கெடுத்தறம் பெருக்கி அக்[3]ராஹாரம் பல

செய்த பரிமிதமாகிய ஹிரண்யக[3]ர்ப[4] கோ[3]

ஸஹஸ்ர துலாபா[4]ரத்து மஹாதா[3]நங்களாற்

கலி கடிந்து மங்க[3]லபுரந் நக[3]ரமாக்கி வீ
ற்றிருந்து செங்கோ[ன]டாவி நின்ற கோச்சே-
ந்தன் மற்றைம்பதாவது ராஜ்ய ஸம்வத்ஸர
ஞ் செல்லா நிற்க வைகை சொன் மதகு ப-
டுத்தரி கேஸரியானெனப் பியரிட்டு கா றொடு-
வித்து காஞுத்தை ஓடை அடைத்து.
ழ்நாடு பருத்திக்கு[டி] ....
....

4. *Pena-ālvar's hymn on Alagar-koil :*

மன்னர்மறுக மைத்துனன்மார்க்கொரு தேரின் மேல்
முன்னங்கு நின்று மோழையெழுவித்தவன் மலை
கொன்னவில் கூர்வேற்கோன் நெடுமாறன் தென்கூடற்கோன்
தென்னன் கொண்டாடுந் தென்றிருமாலிருஞ் சோலையே.

1. K. G. Krishnan, *Madurai Inscription of Pandya Chendan*, EP. Ind. XXXVIII.

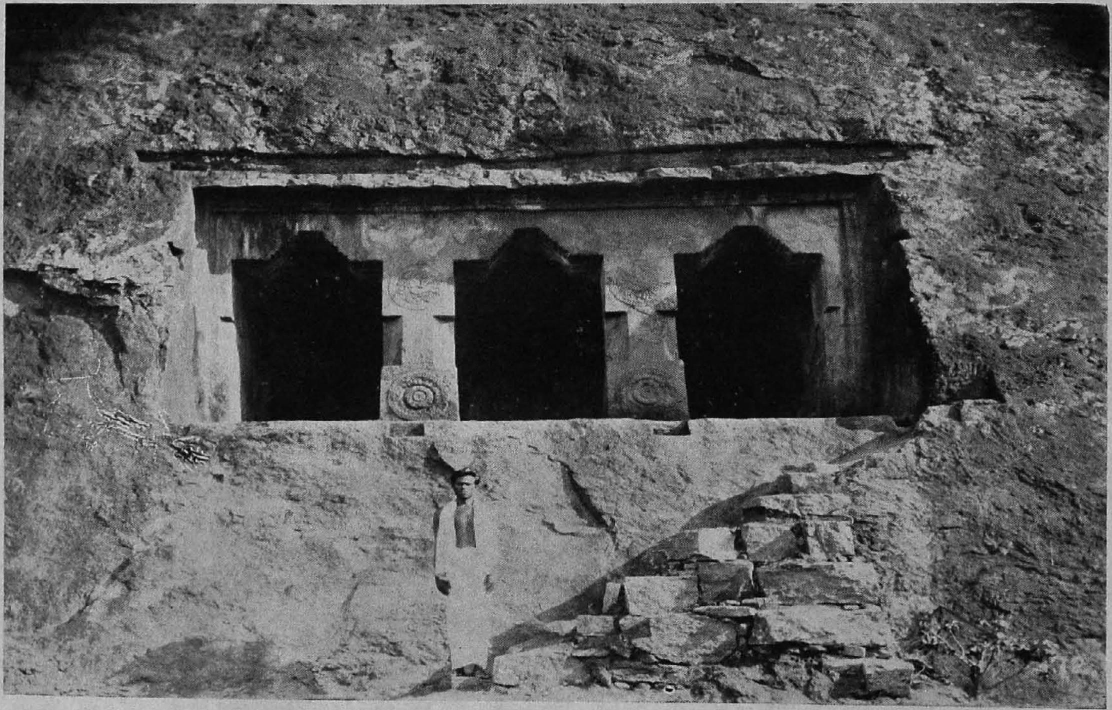


PLATE I: Rock-cut Cave, Tirumalaipuram, Tirunelveli District.

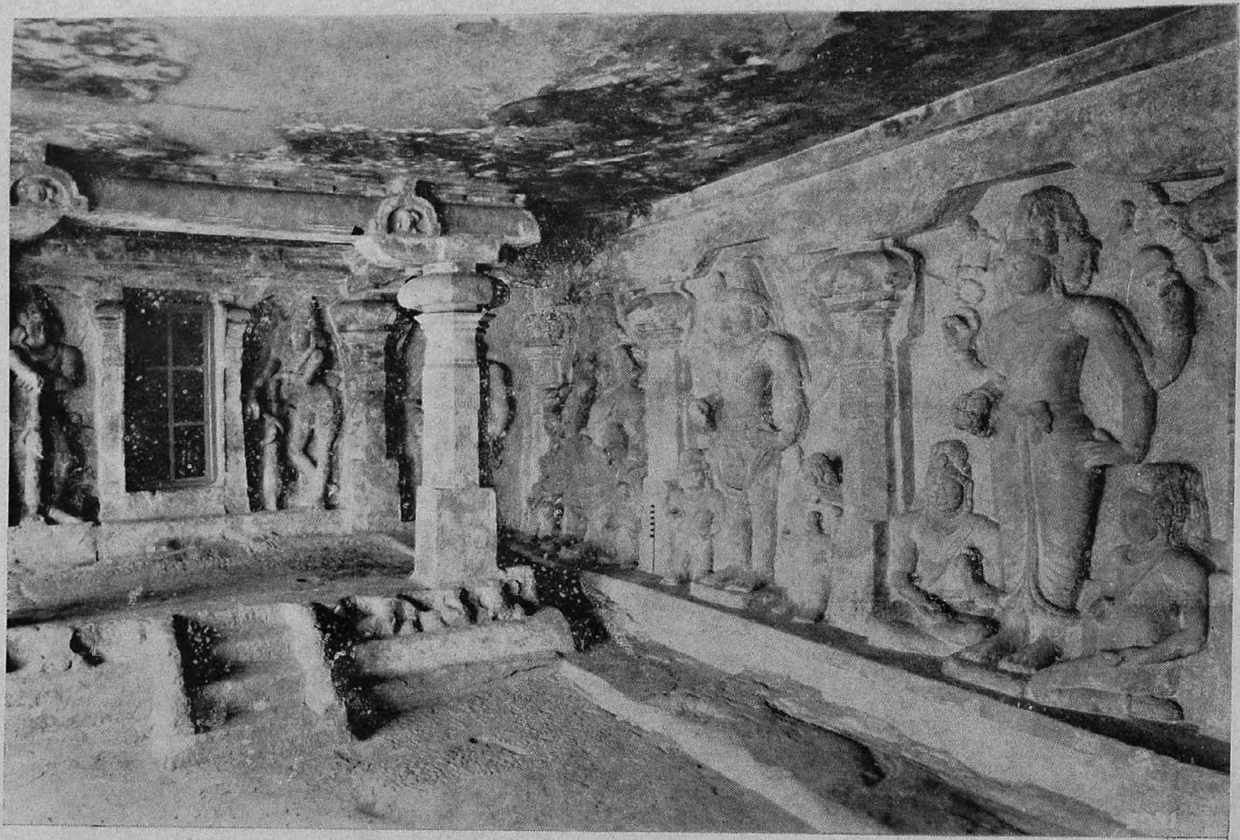


PLATE II: Lower Rock-cut Cave with sculptures, Tiruchirapalli.

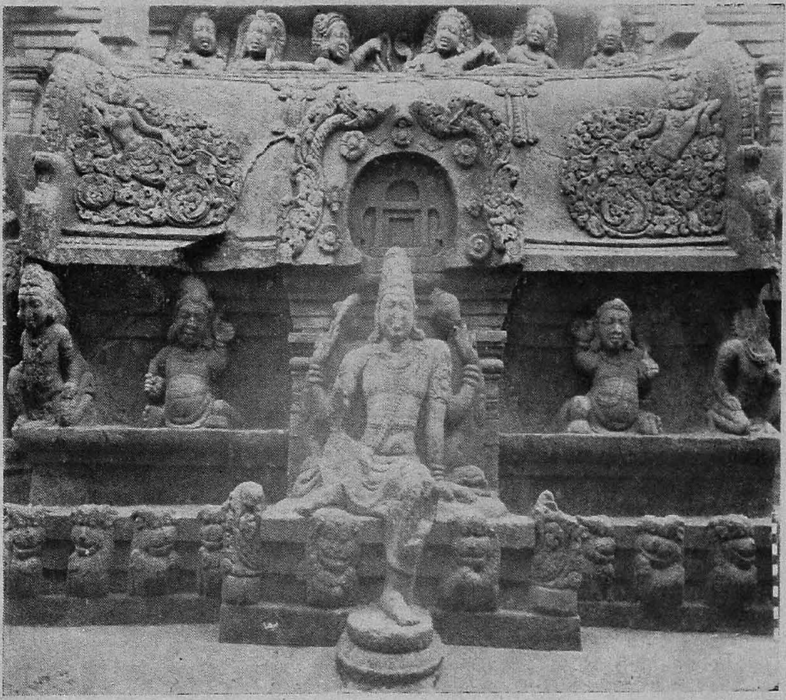


PLATE III: A portion of the cut-out temple, Kazhugumalai, Tirunelveli District.

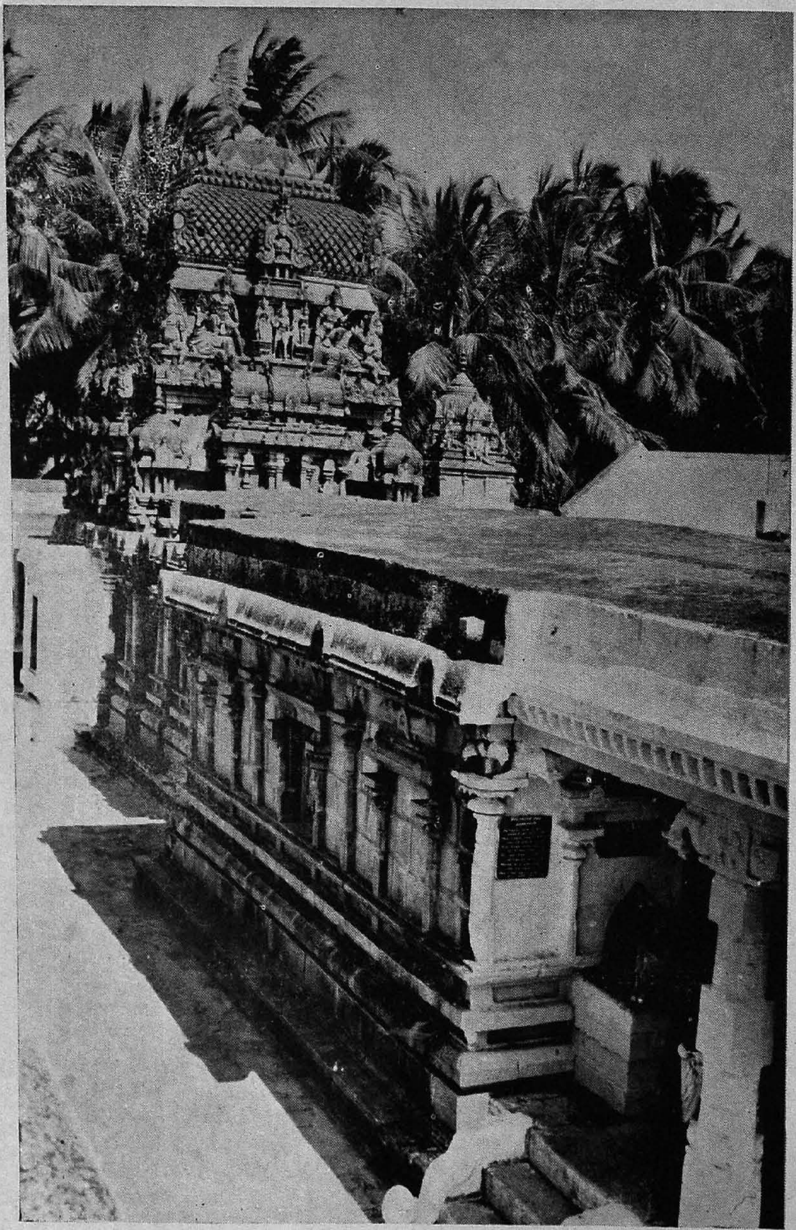


PLATE IV: Siva temple, Sinnamanur, Madurai District.

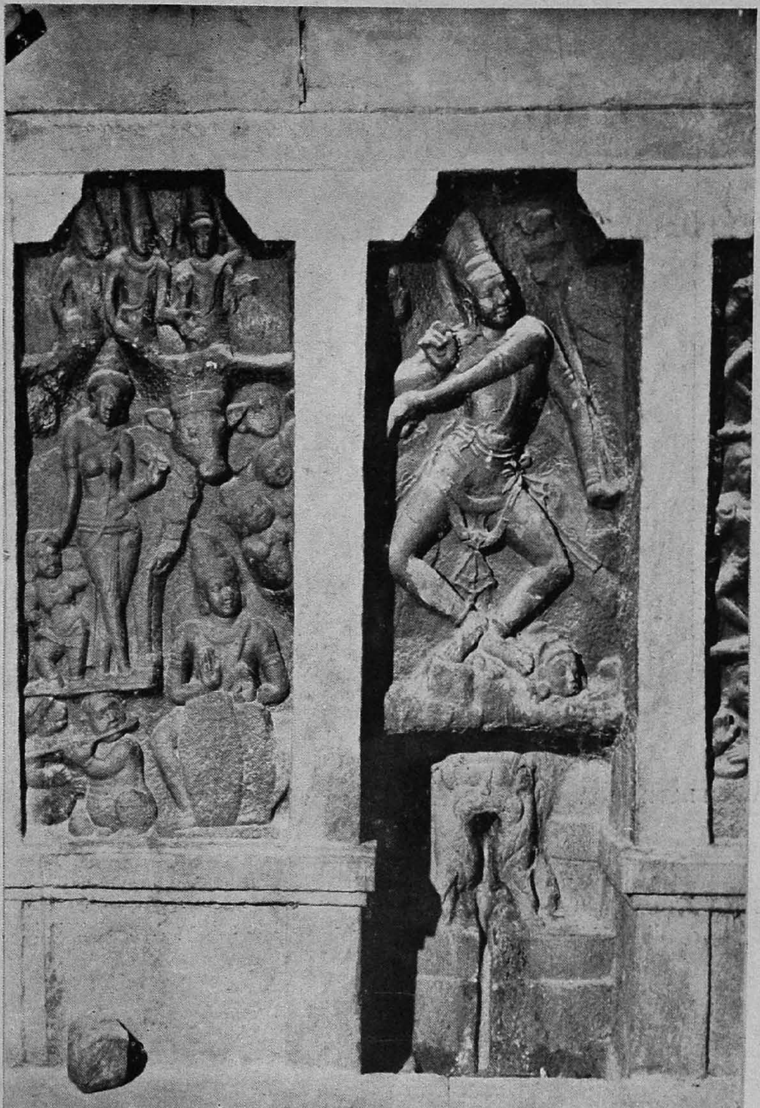


PLATE V: Pandyan sculptures, Tirupparankunram, Madurai District.

PLATE VI-A: Pandyan Paintings. Sittannavasal, Tiruchirapalli District.

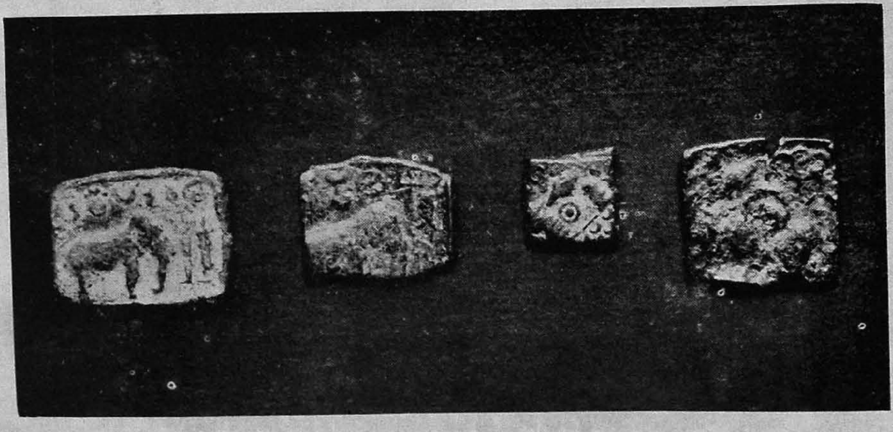


PLATE VI-B: Some Early Pandyan Coins.

Photographs: By Courtesy of A. S. I.

(Continued from the last Volume)

Allchin has rightly discounted this theory (Allchin F. R. op. cit. p. 65)

Examination of a russet-coated painted pot from Coimbatore (Stoney collection, now in the Madras Museum, pre-historic gallery-case O.P. 4 4/B) showed a patch in which the russet coating remained on either side with the painted line in white in between peeled away. There was, however, no groove where originally the white line had trailed. In another patch on the same pot the white overlay remained but the russet coating had disintegrated. The technique, therefore, was not infill. The iron age pottery from cist burials from Coimbatore included in the Exhibition comprised both plain and painted ware and as in the case of the Walhouse (British Museum) and Hunter (Victoria and Albert Museum) collections studied by the writer In 1929-31 for the Royal Anthropological Institute of Great Britain and Ireland the plain ware included some pots decoration on which consisted of incised or incised and white filled horizontal encircling lines. And the mistake of Holder was that to him both the russet-coated painted ware and the incised and white-filled ware without russety coating represented the same technique though in fact the designs were a plastic over-slip on the wet-smoothed surface before the russety coating was applied all over and not an infill.

To the Archaeological Chemist who examined the russety coated painted ware from Brahmagiri nearly a century later the technique was as follows :

" The designs of these seem to have been executed by first applying a thin paste of kaolin or lime producing white parallel or crossed bands and then applying a wash of red ochre. The red pigment shows a net-work of cracks under the microscope. This crackle or crazing indicates that the pots were probably salt-glazed. When the fuel was nearly burnt out and the pots are red-hot common salt is thrown into the kiln. In the intense heat the salt volatalizes and by chemically reacting on the surface of the pots produces the glaze. The glazing effect is, therefore, superficial. With

the exception of iron no colouring material is present. Lead, phosphates etc., which are the usual constituents of glaze are absent" (Ancient India, no. 4, 1948 Brahmagiri and Chandravalli 1947-48, Megalithic and other cultures in Mysore State, Wheeler R. E. M. p. 237, foot note). Both Thapar and Wheeler following the report of the Archaeological Chemist think that this ware was apparently salt-glazed. Of salt-glazing Allchin sees no evidence and for very good reasons he thinks that the typical 'crackle or crazing' effect visible on the surface of the black and red and russet-coated painted ware (Andhra-Karnataka-Tamilnad) was not the result of salt-glazing. According to him there were several reasons why we should reject the theory of salt-glazing in this instance. The volatalizing point, namely 823°C is higher than the maximum temperature of the ware in question — probably not higher than 500° - 700°C, the range of temperature at which most primitive pottery was baked. For thoroughly fired ware a temperature of 900°C is required and that the potter of the Nallampatti russet-coated painted ware could not reach as evidenced by the sherds examined by Dr. Plenderleith. Furthemore the primitive potter of South India at no time seems to have possessed an abundance of common salt (sodium chloride) for that material to have been thrown away into his kiln even granting that the ware that he was producing for the moment was a luxury and not a mere utility ware. The 'Crackle' effect visible on the surface of the ware was not intentional and must be put down to 'the difference in the co-efficient of expansion between the body and slip'. (Allchin F. R. Piklihal Excavation, Hyderabad 1960 pp. 66.67 and Subba Rao, B. Personality of India 1968, p. 175). In fact examination of a russet-coated painted pot of the Stoney collection in the Madras Museum showed 'crazing' only in the russety coat over the white designs-here confined to the region above the line of carination of the vessel-and not in the considerably thicker slip below.

Dr. H. J. Plenderleith who examined a few potsherds of this ware at the British Museum Laboratory said in a personal communication to the writer dated February 14, 1931 that

"the fragments of pottery are decorated with a red glaze. In the dark ground a pattern in lighter red glaze takes the form of a series of lines roughly parallel or concentric or, in the case of two smaller fragments, of chevrons. The potsherds seem to have been burnished". The technique according to him might have been on these lines: "A suitable smooth groundwork having been obtained on the unglazed ware, the potter painted on this a pattern in thin white slip and fired it to fusion point. A red slip was then applied over this and fired at a low heat (or in some other manner fixed) so that he could rub it down afterwards sufficiently to bring the original pattern to view. On refiring the white glaze would unite in part with the slip giving the effect of mottled pale red line in a red ground. The red slip has been generally fused giving a true glaze although judging by the high percentage of carbonaceous matter in the fracture the firing must have been very imperfect".

Below is a comparative table of the stages involved in the fabrication of this ware as outlined by (1) Dr. Plenderleith, (2) The Archaeological Chemist of the Government of India, and (3) Dr. Allchin:

Plenderleith	*Archaeological Chemist*	*Allchin*
On the wet-smooth surface	On the wet-smooth surface	On the wet-smooth surface
1. Pattern drawn in thin white slip.	1. Pattern drawn in a thin paste of kaolin or lime	1. Application of the standard dressing
2. Firing of the white slip to fusion point first firing	2. Wash of red ochre	2. Pattern painted in white clay pigment with an admixture of lime
3. application of red slip	3. Firing	3. Application of an overcoat no more than a thin variety of the under-dressing.

Plenderleith	*Archaeological Chemist*	*Allchin*
On the wet-smooth surface	On the wet-smooth surface	On the wet-smooth surface
4. Firing (second in the series) to fix the red slip or fixing the slip in some other manner		4. Firing
5. Rubbing down the red slip to bring the original pattern to view		
6. Refiring - third in the series or second in case the red slip was fixed otherwise than by firing		

The russet coat is a slip; but it has all the qualities and the advantages of a glaze ; it is a protective coat and it is also transparent. Plenderleith is therefore right in calling it a 'true glaze'. The Archaeological Chemist has found no trace of any colouring material other than iron. Iron occurs in all common clays very generally in the form of ferric oxide of which a proportion of about 8 per cent is frequent. For the russety coat the Nallampatti potter obviously used a slip with a relatively larger percentage of iron (ferric oxide) than the body of the pot. The Archaeological Chemist also speaks of the application of a thin paste of kaolin or lime for producing the white lines. Plenderleith thinks that the pattern was drawn in thin white slip — he does not say whether the white slip was a slip of the same clay as the body of the pot or of a different composition — and over the pattern there was laid a red slip. The soil of Nallampatti, Nattukalpalayam, Sulur and other localities in the Coimbatore District where the russet-coated painted ware has been found in iron age cist-burials is lime-stone mostly and the thin slip used for painting

the designs on the smoothened body of the vessel probably contained some carbonate of lime. To Allchin the painting is in white clay pigment perhaps with an admixture of lime. Again according to him there is an under-dressing below the paint — a slip — what he calls the standard dressing and the overcoat is no more than a thinned variety of the under-dressing. On a pot in the Stoney collection in the Madras Museum, however, where the white paint has flaked away there is no evidence of an under-dressing and apparently the paint was applied on the smoothened surface straight away.

Both the archaeological Chemist and Dr. Allchin think in terms of only one firing whereas Dr. Plenderleith thinks in terms of an initial firing and another and possibly yet another — at a low heat — in between. The white slip of which the pattern is made when fired to fusion point becomes a glaze. After the application of a red slip over the white designs the pot is either fired again at a low heat so that the red slip gets fixed on the 'bisque' body of the pot or it is just possible that the red slip was fixed without the pot having been fired at a low heat — in some other manner. In either case Plenderleith says the red slip is rubbed down after having been fixed. There follows another firing and the white 'glaze' united in part with the red slip, the over-coat, the white lines appearing through the red colour. The red slip when fused with the body of the pot becomes a true glaze.

The exact nature of the russet-coated painted ware, it may still be argued, has not been determined to the satisfaction of the archaeologist. The question is a chemical one.

28. For russet-coated painted ware with wavy lines from Tiruvillvamala see, Menon, K. Govinda, Red painted ware from Cochin State. Man. XXXVII p. 44 f.

First discovery of the ware was made by J. Babington in 1819 from urn burials under 'umbrella stones' in Malabar. He gave a report of it in a paper communicated to the Literary Society of Bombay the following year (Reprint, Bombay,

Transactions of the Literary Society, 1877, p. 342 and Logan, William, Malabar, Vol. I, Madras, 1887, illustration no. X).

In mid-nineteenth century similar ware was reported from Coimbatore District, Madras Presidency (Holder, Edwin, Madras Pottery. The Indian Journal of Art, Science and Manufacture, Vol. vii, 1856; see page 63 for illustrations). Wallhouse, M. J. of the Madras Civil Service reported this particular ware from the same district in 1875 (Wallhouse, M. J. Notes on the megalithic monuments of the Coimbatore District, Journal of the Royal Asiatic Society, 1875, 17) from Nallampatti, 7 miles north of Perundurai (For Pottery from Nallampatti see Corpus at the end of the chapter). The Nallamapatti ware included vessels that 'surpassed in design and texture the pottery then in use in the district, urns tall, narrow and standing on three or four legs often 3′ high, single footed cups, something like large egg cups'. Some pots were 'red, either light or with or without the wavy or semi-circular streaks. Some were black and one large urn was of yellowish clay'. Ring-stands were in abundance, including one that was a thick earthenware ring grooved out in the inner-side and a foot in diameter, "also conical-lids with the white streak often exhibited on the outer and inner sides in an unbroken coil" like those found by Babington from 'Umbrella Stones' in neighbouring Malabar in 1819.

H. O. D. Hardinge (The Madras Journal of Literature and Science for the session, 1889-94) found similar ware with white wavy lines and groups of concentric semi-circles at Nattukalpalayam near Malabar border, from inside a port hole cist underneath stone-shelves or beds.

A few specimens of this ware with wavy lines and of shapes reminiscent of the Nallampatti collection in the British Museum have found their place in the Madras Museum. Among them are chalices from Travancore and Coimbatore, bowls from Coimbatore all of them decorated with wavy lines and a 'flower pot' also from Coimbatore.

When Sir Mortimer Wheeler listed the sites of occurrence of this ware in 1947-48 they were 22. Since then it has been

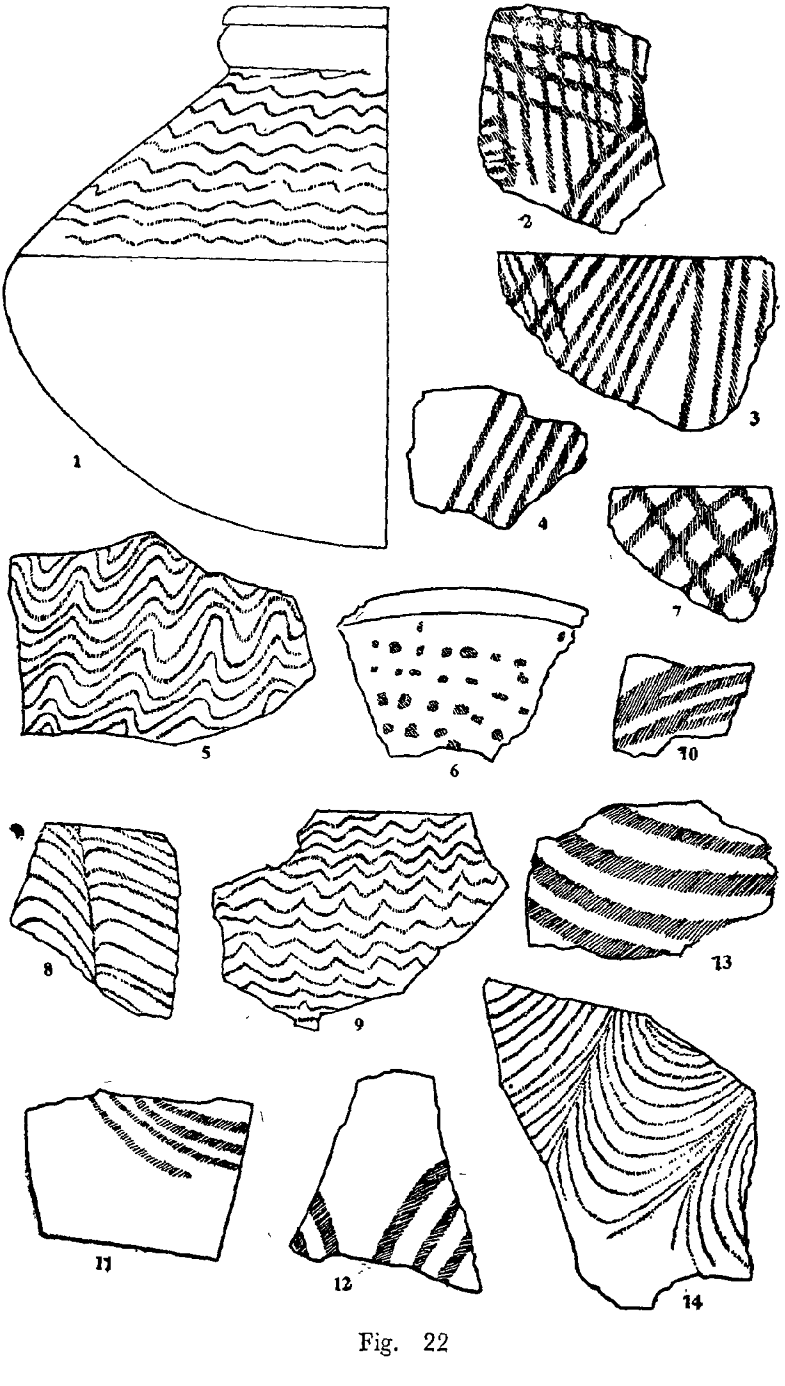


Fig. 22

At one time this particular ware was called the Andhra painted ware. But it has been found in Tamilnadu without Satavahana association and Thapar rightly says that it is a misnomer to call the pottery 'Andhra' (Thapar op. cit. pp. 72, 73). The russet-coated painted ware at Brahmagiri, Maski and Piklihal has been dated to the first three centuries of the Christian Era for reasons which we may not dispute (Wheeler R. E. M. Ancient India, no. 4, July 1947 — June, 1948, p. 236; Allchin F. R. Utnoor Excavations, Hyderabad, 1961, p. 2) but to say that it heralded the early historic period is to ignore the fact that history in this region began much earlier, in the 3rd century B.C, at any rate, with the advent of the Mauryas as evidenced by the Asokan edicts in Karnataka. This particular ware at T. Narsipur (Karnataka) carrid rouletted designs and therefore must have survived into the 1st century A. D. The Cochin, Malabar and Coimbatore (Nallampatti) ware with a different deisgn repertoire and also pot-forms belong to an earlier period. Thapar is inclined to date them to the third or second century B.C. This date, however, has to be determined with reference to the date of the funeral structures within which the ware was found, cists with port-holes and urn-burials under umbrella-stones, some of which may belong to the 7th century B.C. or even to an earlier period (see note Supra 15). Being a luxury ware its technique took some considerable time to reach Karnataka. Its passage was from Cochin and Malabar through Palghat gap into Coimbatore. Dr.Gururaja Rao (Development of Technology during the Iron Age in South India, Indian Journal of History of Science, vol. 5, no. 2, 1970 p. 256) has suggested a southern origin for this ware and thinks that 'in course of time it spread northward into the Deccan which fact again according to him will explain its late arrival in Karnataka and also the altogether differing design repertoire at Brahmagiri — Chandravalli. From Coimbatore it spread to Tiruchirapalli and Madurai districts in the south and Salem in the east. What reached Karnataka was the technique, not the *decor*, nor even the forms.

Sankalia thinks that this ware (with criss-cross designs) at Nevasa cannot be placed prior to the 1st century A.D. since

at this site it was found associated with late Satavahana coins and imitations of Roman bullae (Sankalia H.D. Form History to Prehistory at Nevasa, Poona 1960).

The question is not whether the russet-coated painted ware at Chandravalli, Brahmagiri and Maski — the rectilinear variety of it — is not securely dated to the first two centuries A.D. but whether the beginnings of a cognate ware with different pottery forms and designs from Coimbatore, Cochin and Malabar should also be placed in the same chronological horizon.

Thapar has rightly pointed out that it is immature to equate chronologically both the industries, viz., the one with curvilinear designs and largely associated with megalithic burial and the other with rectilinear designs occurring with Satavahana and Roman coins and also the well-knwn rouletted ware (Thapar, B. K. Maski, 1954. Ancient India no. 13, p. 73). The former on the basis of the Eran coin found in the cist-grave at Sulur, Coimbatore District, he would assign to the third or second century B.C. For one thing we do not know whether the Sulur cist which contained the Eran Coin also contained the russet-coated painted ware of the Coimbatore variety with wavy lines. Secondly as already pointed out (note 14 supra) today we may not accept the evidence of the Eran coin for purposes of dating the port-hole cists at Sulur in which the coin in question was found. Allchin has spoken in terms of several phases of South Indian Iron Age and in the light of Hallur evidence the beginnings of Iron Age in South India go back to the dawn of the 1st millennium B.C. if not to the closing years of the previous millennium and the port-hole cists of Coimbatore (Nallampatti and Nattukalpalaiyam) with their russet-coated painted ware (with wavy lines) also belong to the same period, namely, the Iron Age overlap.

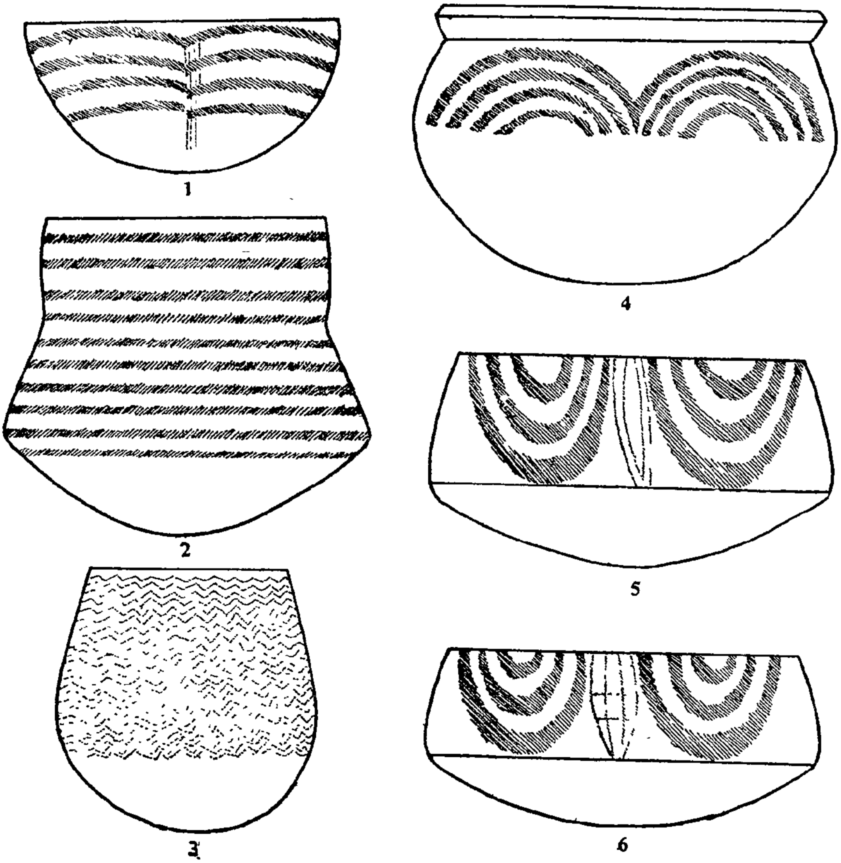
Nallampatti and Nattukalpalaiyam examples of this ware were exclusively of the wavy line *decor* and the rectilinear and criss-cross designs on the ware from Coimbatore and also

other districts of Tamilnadu belong to a later phase of the Iron Age in the region than the umbrella-stones, rock-cut tombs and port-hole cists of Kerala and Coimbatore.

30. For South India's possible contacts with the Middle East during Neolithic times see Chapter III. Note 23.

In any attempt to determine the genetic relationship between pottery from different regions the attributes to be considered are (1) their manufacturing technique, (2) forms and (3) the pigments used and the colour and treatment of the background. Of these form is something primary as already pointed out (note 26, supra p. 94). Between Nos (1) and (3) number (1) is more difficult to imitate than (3) which according to Ernest Wright (The Archaeology of Palestine from the Neolithic through the middle Bronze Age, JAOS 91.2 (1971) p. 281) could easily have been transmitted by trade.

The Walhouse and Hunter collections of pottery from Coimbatore district cist graves include both painted and plain ware and in both varieties there are certain forms which are unique, (1) the chalice, (2) footed bowl with concave vertical rim sides, (3) the 'flower pot' with straight sides, flat base and rim parallel to the floor, (4) pot stands of low collar-shaped variety with bevelled rim and (5) ring-stand with flat bases. The two collections again contain several shapes for which there are no antecedents in India. By and large the Nallampatti painted ware with wavy lines differs markedly from the unpainted megalithic ware of South India. The dish with an internally beaked rim and the partially straight-sided bowl, the latter sometimes with a disc — base are totally absent at Nallampatti. Most vessels at Nallampatti again are carinated (See examples in Figs. 23, 24 and 25). Bevelled rims and squat necks of Nallampatti are characteristic of Tell Halaf; bevelled rim is also characteristic of Jemdet Nasr. (Compare Fig. 25, 1, Nallampatti with items 1 and 2 of Fig. 26, both Halafian from Arpachiyah, item 1, Fig 1 A painted vase in reddish black on buff from an early grave at Tall Arpachiyah, Mallowan, M.E.L. An Iraq civilization



Eig. 23

6,000 years ago. The Illustrated London News Sep. 16, 1933, and item 2, Fig 60, 2 A 738, Painted pottery of the Tall Halaf period, TT6, Iraq Vol. II, 1933, p. 137 para 3).

Chalice :

The chalice in which a cup or bowl is combined with a pedestal base is a type that is familiar to us in the russet-coated painted ware at Nallampatti (Walhouse collection, see Corpus at end of chapter IV, Nos. 1, 2, 3, 4, 5 and 6 for description) Fig 24, 4, 5, 6, 7, 8 and 9. The Nallampatti Iron age chalices are of two varieties, one a carinated bowl attached to a stemmed foot, Fig 24, Nos. 4, 5 and 7 and the other egg-shaped with a short foot, Fig 24, Nos. 6, 8 and 9.

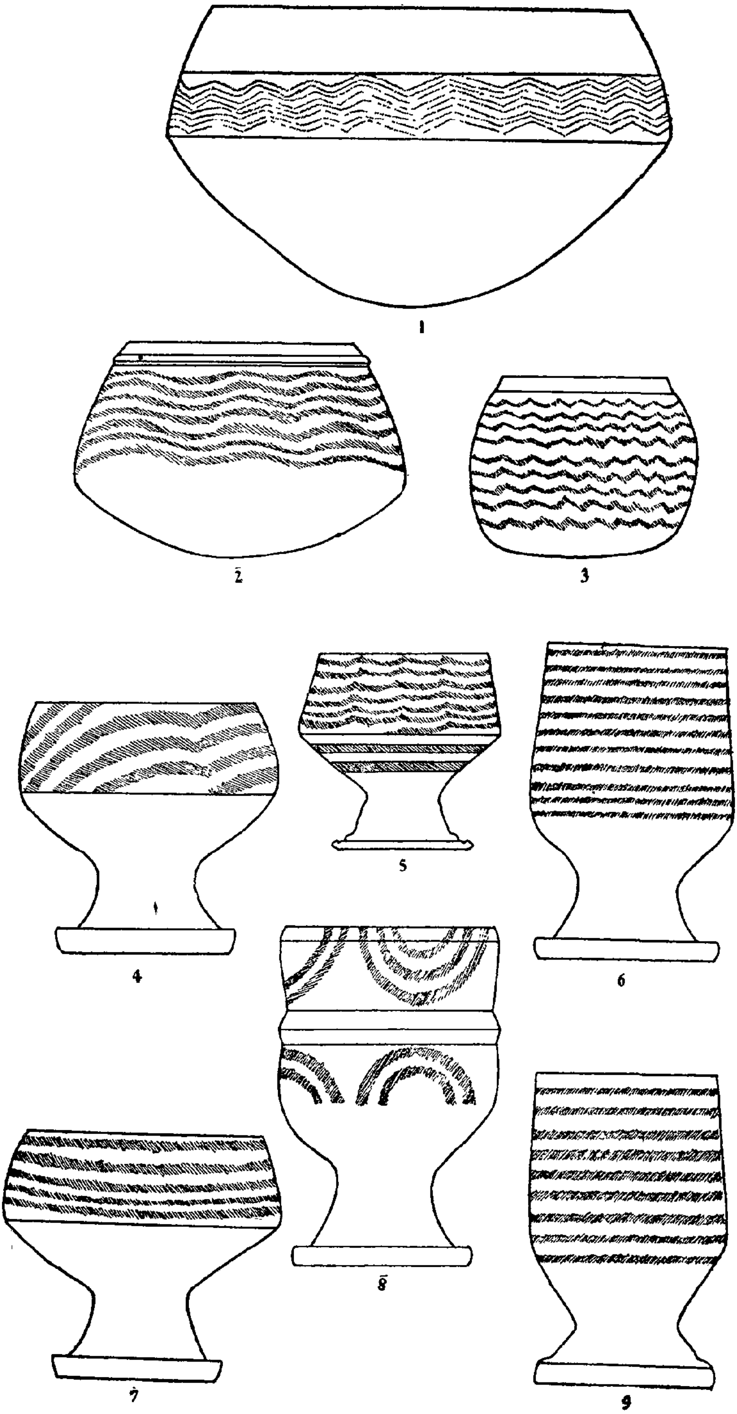


Fig. 24

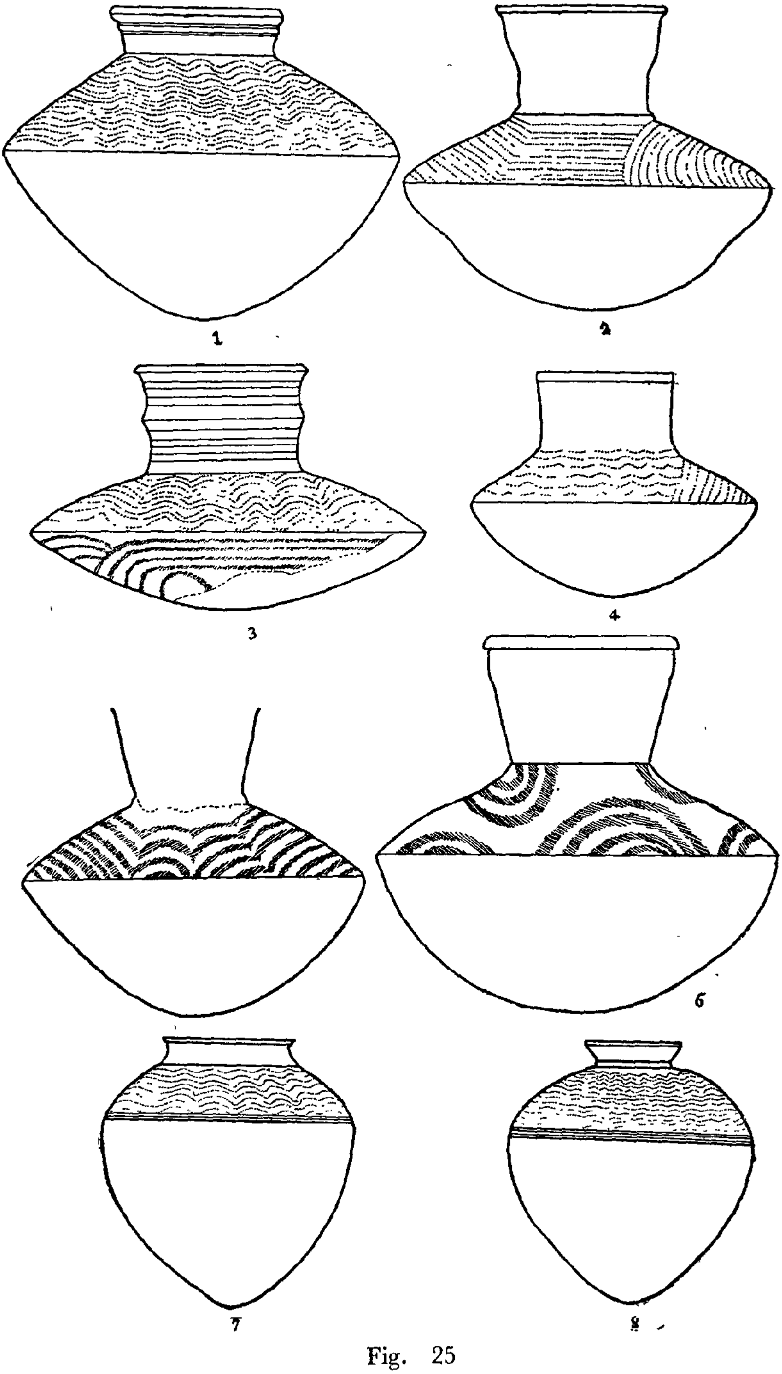


Fig. 25

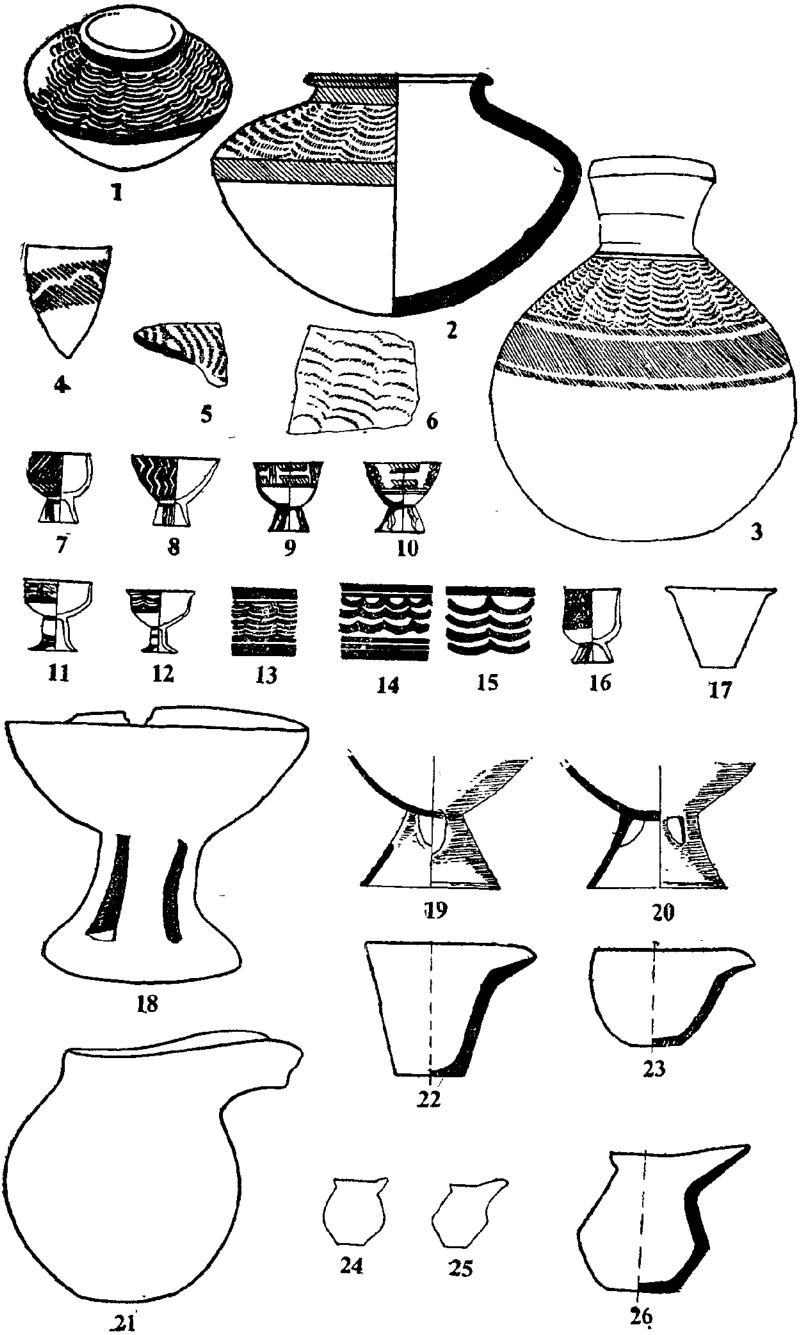


Fig. 26

The first has analogues at Tepe Hissar I A in the 5th millennium B.C.

We come across the chalice / champagne cup at Arpachiyah in circa 3,000 B.C. (Fig. 11-A, Mallowan, Illustrated London News, Sep. 16, 1933, op cit) with black paint on an apricot slip. Mallowan considers it a rare type. At Carchemish champagne vases from cist graves are at least as early as 2,500 B.C. At Tell Billa they are found in the same chronological horizon. Speiser would delimit the area of diffusion of the chalice ware and the civilization that produced it to the highland zone extending from Anatolia to Central Persia (The Pottery from Tell Billa, A preliminary Survey, The Museum Journal, University Museum, Philadelphia, vol. XXIII, No. 3, p. 267) The chalice is the main form at Hissar I A (Fig. 26, 7 and 8) and Hissar Ic (Fig 26, 11, 12 and 16) in the fifth millennium B.C. and Siyalk III (Fig 26, 9 and 12). It, however, disappears in Hissar III (first half of second Millennium B.C).

In Anatolia the small chalice or footed drinking cup seems to occur only in black slip ware and its grey variety and not in the painted ware, because the increasing use of metal in the succeeding periods (Erich F. Schmidt, Anatolia Through the Ages, Oriental Institute's Communications, No. 11, Chicago, 1931) ended the demand for this kind of vessel in pottery. If this be true also of South India, between its painted and plain samples both of the Iron age in the region the former apparently a luxury ware may be taken to represent an earlier tradition than the latter. In this connection it is interesting to note that designs on the russet coated ware from Nallampatti — themselves of the Hassuna-Halaf genre — survive, according to Walhouse (Walhouse, op. cit p. 21) in the earthenware pots used by the wandering mendicants during festivals, but not in the pottery in common use in the district in his time, like the Halaf designs — closely packed lines, straight and wavy — which, survive in the decoration of copper vessels seen in the Near Eastern bazaars today.

Foote (R. Bruce Foote, Government Museum, Madras, Catalogue of Prehistoric Antiquities, Madras, 1901) has listed quite a few chalices with wavy line decoration on them from Iron Age graves from different parts of what were Madras Presidency and Travancore State in the nineteenth century, 928 b, 922 c and 928 d (egg-cup shaped) from Travancore and 1076, 1082 and 1093 from Coimbatore district. 1093 from Vellalur, Coimbatore, is a carinated bowl attached to a stemmed foot like the Nallampatti specimens (Fig 24, 4 5 and 7).

Sankalia has reported hundreds of pedestalled bowls from the earliest levels at Navdatoli (Sankalia, D. Subba Rao, B and Deo, S.B. The Excavations at Maheshwar and Navdatoli, 1952-53, Poona, 1958). Rangpur III produced similar cups and the latter S.R. Rao thinks are derived from Harappan bowls and dishes on stand in three stages (Rao, S.R. Excavations at Rangpur and other explorations in Sourashtra, Ancient India XVIII-XIX, 1963, Fig. 17). Pedestalled bowls and wine-cups have been found at Harappa, Lothal and also at Ahar I B. But to say that they were evolved on the Indian soil is to ignore their presence in Iran in an earlier time bracket and also their occurrence in Afghanistan (Mundigak) and Mundigak is on the road to Baluchistan. Period IV at Mundigak has produced chalices with both incurved and outcurved rims reminiscent of Hissar I A and Salk III and Mundigak's close ties with Iran and Baluchistan have been noticed by the Allchins. (Bridget and Raymond Allchin, The Birth of Indian Civilization, 1968, p. 105)

Sankalia speaks of links between Iran (Sialk) and Central India in the earliest phase at Navdatoli (early second millennium B.C.) in the appearance at the latter site of champagne cups and has thrown out a suggestion that those who made them came from Iran and are to be identified with the Haihayas of Puranic tradition, the precursors of the Nagas presumably in a stone age culture (Illustrated London News, September 5, 1958, p. 18). But to attribute the chalice or the champagne cup to the Aryan speakers as he does is

unwarranted because "The Aryans have nowhere left their name attached to any archaeological remains" (W.G. Adams, Invasion, Diffusion, Evolution, Antiquity, Vol. XLIII, 167, September 1968 p. 205). Furthermore in Iran the chalice belongs to levels anterior to the appearance of the Indo-European speakers in the region.

The characteristic type of chalices from Tamil Nadu (in black-polished, black and red and russet coated painted ware) is essentially a megalithic ware though the russet coated specimens have been found also in non-megalithic contexts as for example from urn-burials under umbrella stones in Malabar. But they are all of them of the Iron age and their analogues as already pointed out are from Gozlu Kule, Tarsus, Asia Minor and Tepe Hissar and Sialk, Iran. At Tepe Hissar the ware is already present in Hissar I A and at Sialk in Sialk III. Footed and stemmed bowls of Harappa, Rupar and Navdatoli, however, are of Hissar II genre. (third millennium B.C.)

A single example of chalice of the Nallampatti form (Fig 24, 4, 5 and 7) in black polished ware came from a pit-circle from Brahmagiri, also of the iron age. Speaking about this type-his p 12-Wheeler says that the type was absent from the cists at the site (Ancient India, No. 4 - p. 218). He called it "a rare type, of short wide-mouthed pedestalled vessel...... characterized by a globular cup with an extremely ground rim and a hollow stem." To him the vessel could have been a cup or incense-burner or even a ring-stand. In the Nallampatti assemblage it was a chalice and not a pot-stand. Pot-stands of the low collar type of which the earliest analogues are at Mohenjo-daro in India, in Egypt as early as the Pre-dynastic period. and in Mesopotamia at Yorgan Tapa in Nuzi levels were common at Nallampatti. The incense-burners in the Megalithic ware examples of which we have from Maski, Karnataka (Fig 26, 19 & 20) and Perumal Hill, Kodaikanal, Tamilnadu (Fig 26, 18) constituted a distinct and separate category, not to be confused with a chalice or ring-stand.

The chalice (Wheeler's P 12) does not occur in the cist-burials at Brahmagiri. In fact there is a partial differentiation

between the ceramic types of the pit-circles and those of the cists at Brahmagiri and if pit-circles antedate the cist-graves representing a different phase of the iron age at the site the chalice itself may represent an earlier pottery form in the ceramic repertoire of Karnataka, Kerala and Tamilnadu. Its survival then in the cist graves in Tamilnadu would seem to indicate that it was a luxury item.

Allchin has drawn our attention to a fragment of a pot from Piklihal, his type 42 (Piklihal op. cit. Pl 28, 42) which he believes was part of a hollow-footed cup of his A_2 ware. He compares it with a fragment from Brahmagiri in A_2 painted ware (Ancient India, No. 4, Fig 23, T 74) and together these specimens are said to recall the footed chalices of Shah Tepe (Allchin, Piklihal Excavations op. cit. p. 44) His A_2 variety represents grey, black, buff, ohre painted ware without burnish from lower-upper neolithic in the Raichur Doab. The bowl considered possibly derived from the fragment illustrated does not appear to be a chalice and neither at Piklihal, nor at Brahmagiri does this shape occur in the Neolithic horizon.

What Thapar calls chalice (Fig 26, 19 & 20) from Period II (megalithic) at Maski (Ancient India No. 13, p. 52, Fig 14, B (i) 6) with a hollow pedestal having an externally grooved ring-base and four oval-shaped holes is to be more correctly called an incense-burner or Fusschalen/fruit-stand. Its nearest analogue in South India is from Perumal Hill, Kodaikanal (Fig 26, 18) also a megalithic ware. Dishes mounted on high cylindrical hollow bases pierced with triangular and lozenge shaped windows occur at Samarra on the Tigris and not far from Baghdad. This type Herzfeld's "Fusschalen" is the ancestor of the Perumal Hill and Maski specimens and the Samarran ware is generally considered Iranian in character and presumably also in origin. The fruit-stand from the Perumal Hill has four narrow oblong holes in the place of the four oval fenestrations of the Maski example. Holes such as these also occur in the so called fruit-stands from the Diyala region, Kafajah of Early Dynastic Period I.

The Nallampatti chalice, the Fusschalen from Maski and Perumal Hill were Iranian in inspiration and were pot-forms that survived in the folk-memory of workers in copper and iron who came to the Deccan and South India from the Caucasus and Iran in the last quarter of the second millennium B.C. Likewise also the beak-spouted jug (Schnabelkanne) from Perumal Hill (Fig 26, 21). The area of distribution of the jug with a side-spout projecting upward generally from the shoulders of the vessel and ending in a more or less elongated beak or a trough like opening extends from Crete in the Vasilikí ware through Anatolia to Chesme Ali Tepe near Teheran according to Frankfort (Frankfort, Henry, Archaeology aud the Sumerian Problem, Chicago, Illinois, Dec. 1932, Table III. 17). There is uncertainity as to the exact date of the beak-spouted vessels from Iran. They occur at Hissar III B (Eric F. Schmidt, Excavations at Tepe Hissar, Damghan), Philadelphia, 1937, Pl XXX VIII, H 4970 and H 4104, (Fig 26, 22 and 23) and Pl XXXVII H 5040 (Fig 26, 25 and 26). They have occurred also at Shah Tepe II b (Fig 26, 24), Hissar III, and fall into the time-bracket circa 2000 – 1600 B.C. Beak-spouted vessels, however, began in Iran in early third millennium B.C. and Frankfort thinks that their technique, and early shapes may have continued (in Iran itself) after they had been given up elsewhere. The Perumal Hill example is of the Iron age in South India the beginnings of which on the evidence of the Neolithic-megalithic overlap at Hallur, Karnataka will have to be dated to the closing years of the second millennium B.C. or the beginning of the first millennium B.C. The writer of this note had occasion to point out in a personal communication to Dr. A. Aiyappan the phylogenetic relationship between the beak-spouted jug from the Perumal Hill (Kodaikanal) stone circle and similar jugs from ancient Iran dating back to the third millennium B.C. (see footnote 5, p. 6, A. Aiyappan, Rude stone monuments of the Perumal Hill (Kodaikanal) Quarterly Journal of the Mythic Society, Bangalore, Vol. XXXI - Nos 3 and 4) The analogues of this type of beaked jug again have been found at Sialk IV in Iran (R. Ghirshman, Fouilles de Sialk, Paris, 1939, vol. 2, pl. XVII, 10)

The external affiliation of the chalice from Coimbatore is confirmed by the occurrence in the Iron Age pottery from the same district the bowl with splayed foot.

The bowl with splayed foot (Hunter collection, Victoria and Albert Museum, Indian Section, No. 5760 - 1901 J.S.M. Height 9·2", diameter of rim 3.4", diameter at base 4·7"; clay smooth, wash of the same clay, wheel thrown ; burnished red outside and inside of neck and base. Two incised encircling bands near the rim).

A pot-form with Near and Middle Eastern affiliation is the bowl with splayed foot (Fig 27, 2) from an Iron age cist-burial from Coimbatore that also coughed up russet coated painted ware. It is matched by a bowl from Tell Arpachiyah of the early Halafian phase (Dr. Takey Dabbagh, Halaf Pottery, cup type 184 distinctively Halafian from Tell Arpachiyah, Sumer, vol. XXII, Nos. I and II, 1966 pl. X. 184). The example from Coimbatore like its Arpachiyah (Halafian) proto-type is also monochrome. Arapachiyah had produced a similar monochrome cup thirty years earlier (Mallowan, M.E.L. and Rose J Cruicksahnk, Excavtions at Tell Arpachiyah, 1933, Iraq II, 1835, Fig. 65. 4(Fig 27, 1). Mallowan considers it an unusual vessel. It is "a beaker with bulging oval body constricted below the rim and mounted on a high hollow, slightly splayed, foot". Footed bowls with concave vertical rim sides from Hissar Ic are less inverted than those at Siyalk III 6. Splaying feet were seen in Siyalk III 5, More examples of splaying feet came from Siyalk III 6 and Siyalk III 7. Fig 27, 3 is that of a painted example from Hissar I A (Schmidt, E.F. Excavations at Tepe Hissar, Damghan, op. cit. Pl III H 1522. Fig 27.4 (also painted) is from Sialk III 2 (Ghirshman, R. Fouilles-de Sialk, 1938, 39, Paris, pl. LXIII, 8412)

Another pot form which has its roots in the Near and Middle East is the 'flower-pot'. Foote has reported a 'flower-pot' like vessel in polished black and red ware from Patpad, Kurnool District, Andhra Pradesh (Indian Prehistoric and Proto-historic Antiquities, Notes on Ages and

Distribution, Madras, 1916, pl. 56, No. 2605 d). Cammiade speaks of a large cylindrical urn from Kandatham Vayil, 11 miles 2 furlongs from Manantoddy on the road to Koroth, Wynad, Malabar, having had a cover of flower-pot shape (Man, October, 1930, no. 135)

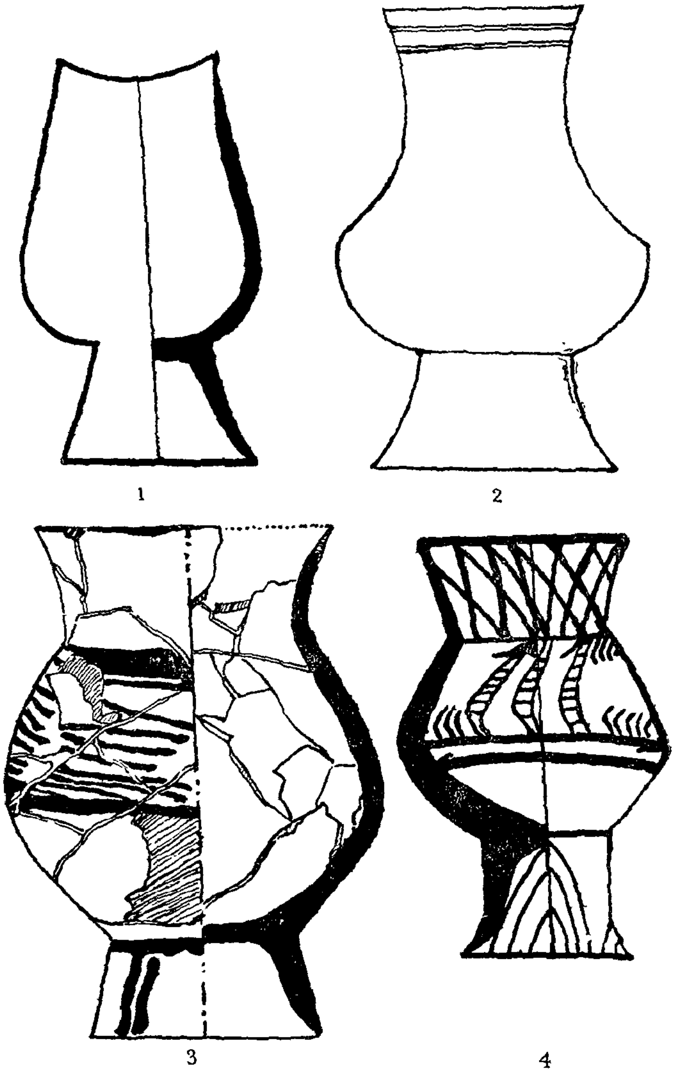


Fig. 27

The flower-pot is a vessel that has straight sides, flat base and rim parallel to the floor. It is an open vessel tapering towards the base. Iron-age pottery from cist-graves at Nallampatti included a vessel of this type (Fig. 26, 17).

For description of this pot see Corpus at end of chapter, Type Q 1, 'Flower-pot'. The 'Flower-pot' has a wide distribution in the Near and the Middle East and in South India there are no known examples of this pot-form except the ones noticed above. The area of its distribution outside India extends from the Aegean to the land of the twin rivers, the Euphrates and the Tigris. Flower-pots with and without fenestrations and also painted have been found at Lefkandi, Euboea, Aegean in the local sub-geometric pottery (pre-1000 B.C.) - Sacket, L.H. and Popham, M.R., Lefkandi, A Euboean Town of the Bronze Age and Early Iron Age, Archaeology, vol. 25, No. 1, January 1972. p. 16. In the Diyala region during Early Dynastic I 'Flower-pots' decorated with excised triangles were found in Hill B at Tell Agrab and at Kafajah in Houses 8 (Delougas, Pottery from the Diayala region, Chicago, 1947 pl. 45 a, b and Pl. 65. 43). Watelin found identical vessels at Kish with excised decorations indicating that the two assemblages were contemporary (Watelin L. Ch. and Langdon, S. Excavations at Kish IV, Paris, 1934, pl. XVI, 2). The Nallampatti and Patpad examples have flat rims parallel to the floor and they belong to the Iron age in South India.

The fact that the Nallampatti and Patpad 'flower-pots' seem to have no antecedents in South India would seem to indicate that like the chalice and the beaker with splayed foot the 'flower-pot' was also exotic to the soil. To account for its presence in South India in a different chronological horizon one has to postulate a migratory movement of people, metal-workers and smiths, in this case from the Near and the Middle East, carrying with them in their folk memory certain pot-forms which included the chalice, the fusschalen/incense burner with fenestrations, the beaked jug, the beaker with splayed foot and the 'flower-pot' The advent of the metal workers, the smiths was not in the nature of a population change in as much as the new pottery forms were mostly of luxury and not utility ware.

Ring-stands :

'A thick red earthernware ring grooved out on the inner side and a foot in diameter from a cist-grave at Nallampatti,

Coimbatore, District (Walhouse M. J. Megalithic monuments in the Coimbatore District, J R A S, 1875) about the use of which he was not clear and which the people of the village thought was a musical instrument reminds us, from Walhouse's description of it, of ring-stands from (1) Egypt and (2) Nuzi. The Nallampatti examples is unique in the sense that it has no parallel at other Iron Age sites in South India. Red pottery rings as stands for water jars occur in the Early Dynastic Period in Egypt (Petrie, Sinai, 145). Ring-stands such as were commonly used for holding round-bottomed vessels upright were found in Kurdish Shaghir mound, south of Yorgan Tepe, Prehistoric Level XI, (Ring-stand, Starr R.F.S.-Nuzi, Vol. II, Cambridge, Massachusetts, 1939, Pl. 39 X). Two fragments of rings from Level XI of fine greenish ware about 1 cm. high had knife-like edges and flat bases, Starr thought might have been used as ring-stands.

Pot-stands :

The Nallampatti assemblage of iron-age pottery also includes pot-stands as distinct from the ring-stands mentioned and they were of the low collar-shaped type. Like ring stands pot-stands both tall and low were in vogue in Egypt of the Predynastic period. Burton-Brown has discussed their occurrence in the Near East in 'Coming of Iron to Greece", p. 189. On the basis of the occurrence of pot-stands of the tall type with a narrow waist flaring outwards at top and bottom, and of the low collar shaped variety in the Near East and Greece he has postulated 'migrations towards Greece from the general direction of Caucasia at 1200 B.C. beginning somewhat earlier, but attaining their maximum at that time' (Burton-Brown, T, Early Mediterranean migrations, An Essay in Archaeological interpretation, Manchester, 1961, p. 34)

In Iron-age cist burials of Karnataka and Andhra Pradesh and cist and urn burials of Tamil Nad and Kerala the low collar shaped variety of pot-stands were of common occurrence. They go back to proto-types at Mohenjodaro in the early second millennium B.C. (Marshall, Sir John, Mohenjodaro and the Indus Civilization, London 1931,

pl LXXXII, Jar-stands TYPE AE). In the Nallampatti collection at the British Museum there are as many as ten (see corpus at end of chapter L Nos 1 to 10). Like the Walhouse (Nallampatti) collection in the British Museum the Stoney collection of iron-age pottery (Coimbatore) in the Madras Museum also includes several examples of this type (Bruce-Foote, Government Museum, Madras, Catalogue of Prehistoric and Proto-historic Antiquities, Madras, 1901, Nos 1144, 1145, 1146, 1147 and 1148). Bodinayakanur, Madurai District (Ibid No. 1148) gave an example of this type. They have been reported from Adichanallur. The Hunter collection (Indian section, Victoria and Albert Museum) and the Stoney collection (Madras Museum) have examples of pot-stands with two lips like some from Nuzi (Nuzi vol. ii, pl. 94 j) The pot-stands from Nallampatti as well as those of the Stoney collection are of the low collar shaped variety. In all cases except one (corpus type L.1) in the Walhouse collection the diameter at the top is shorter than at the base.

Pot-stands were common in Mesopotamia about 3000 B.C. They were found in the oldest strata at Assur and Fara and at Sialk II. They had been used, both tall and low stands, in Egypt from the time of the Predynastic period. Sewell found a few pot-stands with narrow waist flaring outwards at top and bottom from "rude stone circles" at Guntakal, Bellary District (Sewell collection, Indian section, Victoria and Albert Museum, South Kensington, Nos 03901, I.M. 303, 1914, I.M. 304, 1914, and I.M. 302, 1914) - Prehistoric Burial sites in S. India, JRAS, 1902 - in association with a tall drop shaped pot the analogues of which are in Egypt of the fifteenth Dynasty.

The Nallampatti pot stands have their antecedents in earlier time-brackets in India at Mohenjodaro and beyond India in the Near East.

Pottery lids/Jar covers.

Pottery lids of the Nallampatti genre have their parallels at other iron-age sites in South India, at Mohenjodaro in

Sind in the beginning of the second millennium B.C. and at different periods in several sites in the Near East, at Azerbaijan in period which ended about 2500 B.C., at Tepe Gawra in the second half of the third millennium B.C. and contemporaneously at Beth-shan, Israel and Alaka Huyuk, Asia Minor. Burton-Brown would date the lids from Ashur to the earlier half of the second millennium B.C. Lids for large storage jars are known from Jemdet Nasr, Kish and Kafajah (Pro-literate levels). In the Diyala region pot covers with a hollow squat elliptoid body and a solid knob handle occurred sporadically at the end of Early Dynastic I but was more typical of ED_2.

The *decor* of the Coimbatore painted ware in the British Museum (Walhouse collection from Nallampatti dist. graves) and in the Indian section, V & A Museum, South Kinsington (Dr. Hunter collection) respectively is of the Hassuna-Tell Halaf genre. The pigment used and the colour and treatment of background are no doubt different. But these factors are of less consequence than the designs themselves. The Halaf ware at the type site Arpachiyah near Mosul is characterized by closely packed lines straight or wavy. Many decorative units according to G. Ernest Wright (The Archaeology of Palestine from the Neolithic to the Middle Bronze Age, JAOS 91.2, 1971 p. 281), could be discovered quite independently by different peoples for the first time and there is nothing particularly advanced in the use of triangles, wavy lines or parallel straight lines as the basis for geometrical composition. But we cannot always look upon single decorative elements as simple geometrical figures conceived as such and used without meaning. Packed wavy lines of the Nallampatti painted ware are an instance in point. What the wavy lines represented is anybody's guess. Did they signify rippling water and point to a period when the ancestors of the potters who etched them lived on the banks of rivers or along the seacoast? Tell Halaf is not far from Ashur on the Tigris and Hassuna ware is of a type first found in Samarra and also at various sites between the Tigris and north Syria. Did the Tell Halaf people who abandoned their settlements on the arrival of new comers from Babylonia and went to distant lands carry with them

some of their distinctive ceramic *decor*? Mallowan (M.E.L. Mallowan, Chagar Bazar from 3000 B.C to 1400 B.C. Illustrated London News, March 27, 1937) talking about the displacement of painted pottery at Chagar Bazar says, "...... after about 2700 B.C. painted pottery seems to have become obsolete in Assyria and here we have a most interesting insight into the migration of displaced peoples for we know that when the artisans who fashioned this painted pottery were driven out of Assyria and the Habur they moved eastwards to Iran. At settlements such as Tepe Hissar in the Elbruz mountains we find potters producing similar fabrics in about 2500 B.C. several hundreds of years after they had been driven out of Assyria". Mackay has pointed out certain striking analogies between the Jhukkar and the Tell Halaf ware. He says, "It is possible that the Tell Halaf people wandered far afield taking their ceramic art with them and though distance between north Assyria and the Indus valley is 1500 miles as the crow flies, it must be remembered that about two thousand years divided the two cultures and hence there was ample time for artistic conceptions to penetrate from one country to another", (Mackay, Chanhu—Daro Excavations, 1935-36 New Haven, Connecticut, 1943, p. 129). Resemblances between Tell Halaf ware and that of Iran and Baluchistan have been noticed and from the latter country favoured patterns could easily have spread to India. Hence to term the points in common as regards their pottery decoration between Jhukkar and Tell Halaf as fortuitous Mackay thinks is to underestimate the evidence. Jhukkar is in Sind and further down, in the Tapti valley, at Prakash (Period I, Chalcolithic, circa 1700-1300 B.C.) continuous wavy lines of the Tell Halaf genre and reminiscent of the Nallampatti *decor* were found by Thapar (Thapar, B. K. Prakash, Fig 16, 26, Ancient India, Nos. 20 and 21, 1964 & 1965) on the inner side of a dish of drab ware. In the Tell Halaf period there were links with the Persian Gulf (830 miles distant) and the movement of the Halafian artisans was not always westward; they must have spread eastward too beyond the Persian Gulf.

The Halaf ware at the type site Arpachiyah near Mosul is characterised by closely packed lines, straight or wavy fields

of dots and circles often placed in panels. Fig. 25, 2 is that of a painted pot from Arpachiyah of the Tell Halaf period, TT6 (Fig 60, No 2 A, 73, Iraq vol II, 1933) It is almost identical with the Nallampatti russet coated painted pot with squat neck and sharply bevelled rim (Fig 25, 1, corpus G (b) 3). Like the Arpachiyah example its design consists of parallel horizontal ripples painted on to shoulder of vase. The resemblance between the two is a resemblance in shape as well as in decoration. Another Halafian pot reminiscent of Nallampatti is Fig. 26, 1 from Chagar Bazar (Illustrated London News, March, 27, 1937). The repertoire of painted patterns at Nallampatti included curvilinear lines, concentric semicircles and wavy lines. The most common motif in decoration was that of wavy lines. The disposition of the lines as in the Halafian ware is tectonic being in definite relation to the shape of the vessel. Not only has the Nallampatti russet coated painted ware captured certain Halafian pot forms and decor, it has also captured the Halafian apricot colour. The effect of the russety coat over the white wavy lines has been to give the latter a Halafian colour.

Horizontal wavy lines of the Tell Halaf genre constituted a common design in a group of orange-red painted group at Yorgan Tepe (Prehistoric levels, Pit L 4) — See fig 26, Items 5 and 6 (NUZI, vol II. op. cit Plate 47 M and N). Parallel wavy lines occur in Al Ubaid ware at Tepe Gawra. Packed parallel wavy lines as those of the Hassuna-Tell Halaf ware (Fig. 26, 13), Mallowan and Rose op. cit. 1935 Arpa. Fig 50. 21 are seen at Susa I (Fig. 26, 14), at Bakun, B II (Fig 26, 15) and at Tepe Gawra Fig 26, 3. Concentric semi-circles arranged in bows round the vessels a characteristic of Nallampatti bowls (Fig 23, 4, 5 & 6 have their parallels at Siálk III (Ghirshman, Roman. Fouilles de Sialk, Paris 1938-39 Pl LXXVIIIC 17)

While parallel horizontal and wavy lines as a *decor* have their source at Tell Half the technique of painting on the Nallampatti russet coated painted ware which is overslip we come across for the first time at Nuzi (C. 1500 B.C) White

star appears on the Kudurru or boundary stone (see plate V, 1). Interior decoration characteristic of Nallampatti ware (corpus, 3 (c) 2 and 3) is not seen in russet coated painted ware elsewhere in South India.

White slip in line patterns put on a bright red pattern occurs in the pre-dynastic potterry in Egypt, a style which survives in modern times in Algeria. Lydian ware included pots with white or red paste of fine texture and parallel band decorations in white or yellow. The earlier stages in the evolution .of the russet painted ware apparently were (1) incised horizontal lines encircling the pot, sometimes also filled in white, found on some pots in the Nallampatti collection and (2) white as an overlaid colour common in Nuzi (Hurrian) ware or wavy lines on a reserved light band as seen on some sherds from Elamite sites. The white overslip required a binding coat. This was given in Kerala and Coimbatore by the application of a red wash or slip over the pattern in white. It helped the iron-age potter to recapture the apricot, yellowish, colour of the Halaf ware the tradition of which had been lost when the megalith-builders and metal workers had moved out of the Caucasus, and Transcaucasia in the closing centuries of the second millennium B.C.

The russet coating is absent at Nuzi. But the technique of white overslip on a base colour applied in a thin solution and bound more less firmly to the body of the vessel is characteristically Hurrian. As already pointed out white as an overlaid colour in pottery is common at Nuzi (Yorgan Tepe) in the Hurrian ware, white on black, white on red and white on brown. And as for the designs they are of the Hassuna — Halaf genre. The connection between the russet coated painted ware of Nallampatti and the Near East is further confirmed by (1) the Nallampatti pot-stands with bevelled rim which have their analogues at Nuzi and not either at Brahmagiri or Maski, (2) the Nallampatti flower pot which has its analogues in the Diyala region, (3) the chalice with its analogues at Hissar and Siyalk and (4) the beaker with splayed foot (Hunter collection) which has its analogues in

plain ware at Arpachiyah (Halafian), Hissar and Giyan. It is true that 'there is nothing particularly advanced in the use of triangles, wavy lines or parallel straight lines as the basis of a geometrical composition'. But in the case of the russet — coated painted ware from Coimbatore the undulating lines are overlaid on the slip as in the case of the Nuzi (Hurrian) ware mentioned. Again when designs — in this case parallel wavy lines-and also the technique of overslip used for executing the designs are factors that link the (Hurrian) ware with Nallampatti painted ware one may not dismiss the affinity between the two as due to chance. There probably exists a phylogenetic relationship between the two.

To argue from pottery to people is not scientific and therefore one ought not to attempt to name the potter who made the russet-coated painted wáre of Nallampatti in circa 1000 B.C. Whoever he was he came with the people who built the cists with port-holes in Kerala and Coimbatore and interred the bones of their dead in urns and umbrella stones in Malabar, themeselves workers in metal. He brought with him memory of certain pot-forms like the chalice/champagne cup, the tall cup with splayed foot, the flower-pot and a certain tradition of *decor'* which included parallel wavy lines, and hanging semi-circles.

CORPUS OF IRON AGE POTTERY FROM COIMBATORE

British Museum — Department of Antiquities — The Walhouse Collection, & Indian Section, Victoria and Albert Museum, South Kensington — The Hunter collection.

(The hatched lines indicate the designs in white overslip under the russet coat. The designs, however, are actually bolder than they would seem from the illustrations. The numbers within brackets are numbers noted on the pots. All the pots were found in cist-burials, the Walhouse Collection from just beyond the village of Nallampatti, seven miles north of Perundurai, district Coimbatore, Tamilnadu State and the Hunter collection from the same district — locality within the district not recorded).

Type A: Saucers:

1. Clay well levigated; wheel-thrown; slip of the same clay; plain, burnished brown; diameter of rim, 4.1", depth 1.2"; broken rim. Walhouse collection, Department of Antiquities, British Museum, (75, 12 – 10, 37).

2. Clay well levigated; wheel-thrown; slip of the same clay; plain, burnished brown outside and deep red inside; diameter of rim 4.1"; depth 1.3". Walhouse collection, Department of Antiquities, British Museum (73 — 12 — 10, 38).

3. Clay, well levigated; wheel thrown; slip of the same clay; plain, burnised black inside and out; diameter of rim 2.8", depth 8". Walhouse Collection, Department of Antiquities, British Museum. (73, 12 — 10, 41).

4. Clay well levigated; wheel-thrown; slip of the same clay; plain, burnished brown outside and black inside; diameter of rim 4.4", depth 1.1.". Walhouse Collection, British Museum, Department of Antiquities. (73, 12 – 10, 36).

5. Clay well levigated; wheel-thrown; slip of the same clay; plain, burnished brown. diameter of rim 4", depth 1.1". Walhouse Collection, British Museum, Department of Antiquities (78, 12—10, 39).

6. Clay well levigated; wheel-thrown; slip of the same clay; plain, burnished brown, a black patch on the body outside; diameter of rim 3.6", depth 9". Walhouse Collection, British Museum, Department of Antiquities.

7. Clay well levigated; wheel-thrown; slip of the same clay; plain, burnished black inside and buff outside; diameter of rim 5", depth 1.4". Walhouse Collection, British Museum, Department of Antiquities.

8. Clay well levigated; wheel-thrown; slip of the same clay; plain, burnished black inside and out; diameter of rim 4.7", depth 1.4". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 35).

9. Clay well levigated; wheel-thrown; slip of the same clay; burnished dark brown; diameter of rim 3.7", depth 1". Walhouse

Collection, British Museum, Department of Antiquities (73, 12 — 10, 40).

10. Clay well levigated, wheel-thrown: slip of the same clay; burnisned dull red with black patches; diameter of rim 4.5", depth 1.1". Walhouse Collection, British Museum, Department of Antiquities.

Type B (a): Bowls:

1. Clay well levigated; wheel-thrown; slip of the same clay; painted, russety coat; design as shown in sketch; height 3"; diameter of mouth 6.35". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 25). Fig. 23, 1.

2. Clay well levigated; wheel-thrown; slip of the same clay; dull brown inside and out; two incised encircling lines near the rim height 3.2"; width of rim 5.2". Walhouse Collection, British Museum, Department of Antiquities (63, 12 — 10, 26).

Type B (b): Bowls:

1. Clay well levigated; wheel-thrown; slip of the same clay; burnished deep red outside and black inside neck and base; height 6.3"; greatest width 5.9"; diameter of mouth 3.4" Walhouse Collection British Museum, Department of Antiquities (73, 12 — 10, 19)

2. Clay well levigated; wheel-thrown; slip of the same clay; burnished deep red outside; rim and inside black polished; Height 3.9" greatest width 4.5", diameter of mouth 2.8". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 20).

3. Clay well levigated; wheel-thrown; slip of the same clay; base beaten to shape; painted, russety coat outside; inside black; design 10 parallel encircling bands; Height 3.1", Diameter of rim 2.8", greatest width 3.7". Indian Section, Victoria and Albert Museum (5761 — 1901, J. S. M.) Fig 23, 2.

4. Clay well levigated; wheel-thrown; slip of the same clay; base beaten to shape; burnished red outside and black inside: Height 2.5", greatest width 8", diameter of rim 2.3". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 21).

5. Clay well levigated; wheel-thrown; slip of the same clay; burnished red outside and russety coat; black inside; Design, 20 parllel wavy lines as shown in sketch; Height 5.3", greatest width 5.2", diameter of rim 4.1". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 22). Fig 23, 3

Type B (c) : Bowls:

1. Clay well levigated; wheel-thrown; slip of the same clay; burnished red outside and russety coat; black inside; Design as shown in sketch; Height 2.7", greatest width 4.35"; Diameter of rim 4". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 12). Fig 23, 4

2. Clay well levigated; wheel-thrown; slip of the same clay; base beaten to shape; burnished red inside and out; painted design outside under russety coat as shown in sketch, inside, bottom, a star pattern painted under russety coat with 11 rays radiating from the centre; Height 2.1", greatest width 4.1", diameter of rim 3.5". Walhouse collection, British Museum, Department of Antiquities (73, 12—10, 17). Fig 23, 5

3. Clay well levigated; wheel-thrown; slip of the same clay; burnished red inside and out; painted design outside and under russety coat as shown in sketch; inside, bottom, a star pattern painted under russety coat with 9 rays radiating from the centre; Height 1.8", greatest width 4", diameter of rim 3.5". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 16). Fig 23, 6

4. Clay well levigated; wheel-thrown; base beaten to shape; slip of the same clay; burnished bright red inside and out; painted design outside under russety coat; 8 wavy bands as shown in sketch; Height 3.2", greatest width 6.1"; diameter of rim 5.2"; A few dark patches outside on base. Hunter Collection, Indian Section, Victoria and Albert Museum (08078. 1. 8). Fig 24, 1

5. Clay well levigated; wheel-thrown; base beaten to shape; slip of the same clay; burnished red inside and out; painted design outside under russety coat; 12 wavy parallel bands as shown in sketch; Height 5.3", diameter of rim 5.5". Hunter Collection, Indian Section, Victoria and Albert Museum. Fig 24, 2

6. Clay well levigated ; wheel-thrown ; base beaten to shape; slip of the same clay; burnished red outside and black inside and outside bottom; painted design outside under russety coat; 11 wavy parallel bands as shown in sketch. Height 3.2", greatest width 5.4", diameter of rim 3.9". Hunter Collection, Victoria and Albert Museum (5762 — 1901 J. S. M.). Fig 24, 3

Type F: Wide-shouldered, gaping:

1. Clay well levigated, wheel-thrown, slip of the same clay, lower half outside burnised red, inside and upper half outside black; a small bit of rim missing, an oval patch on shoulder showing a flake, two incised parallel encircling lines round neck. Height 2.3", greatest width 3.3", diameter of rim 2.7". Walhouse Collection, British Museum Department of Antiquities (73, 12 — 10, 7).

2. Clay well levigated, wheel-thrown, base beaten to shape, slip of the same clay, burnished red outside, except for two dark patches, black inside of neck and body, small bit of rim missing. Height 2.8", greatest width 3", diameter of rim 2.95". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10 — 18).

Type G. (a) : Wide-shouldered, narrow-mouthed:

1. Clay well levigated, wheel-thrown, slip of the same clay with possible addition of lime, burnished red, neck imperfectly fired. Height 3", greatest width 4.7". Walhouse Collection, British Museum Department of Antiquities (73, 12 — 10, 5).

2. Clay not well levigated, sand used as degraissant, wheelthrown, slip of the same clay with possible addition of lime, has peeled away on the upper half of the body, burnished deep-red, base and neck black owing to imperfect firing. Height 3", diameter of rim 2.25". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 4).

3. Clay well-levigated, wheel-thrown, base beaten to shape, burnished red outside except for a black patch on the shoulder. Height 1.8", greatest width 3.4", diameter of neck 1.7", neck and rim missing Walhouse Collection, British Museum. Department of Antiquities. (73, 12 — 10, 6)

4. Clay not well levigated, sand used as degraissant, wheel-thrown, slip of the same clay, burnished red outside below shoulder, outside shoulder and inside of neck black, upper part of neck and rim missing. Height 2.5", greatest width 3.2", diameter of neck 1.45". Walhouse Collection, Department of Antiquities. (73, 12 — 10, 9)

5. Clay containing sand as degraissant, wheel-thrown, slip of the same clay, burnised red outside and black inside of neck, russety coat over painted design in white — 10 parallel encircling bands. Height 4.1", greatest width 4", diameter of rim 2.1". Walhouse collection, British Museum, Department of Antiquities (73, 12 — 10, 15).

Type G (b):

1. Clay well levigated, wheel-thrown, slip of the same clay, russety coat over painted design in white, design as illustrated — 4 bands on neck, wavy parallel bands on shoulder, wavy lines on body — part of neck and rim and a big slice from base missing, Russety coat has peeled away from part of shoulder, reconstructed from bits. Height 6.2", greatest width 9.75", diameter of rim 3.9". Walhouse Collection, British Museum, Department of Antiquities. Fig 25, 3.

2. Clay well levigated, wheel-thrown, slip of the same clay, burnished red outside and inside of neck, russety coat over painted design in white, design as shown in sketch. Height 7", greatest width 8.5", diameter of rim 4". Walhouse Collection, British Museum, Department of Antiquities. (73, 12 — 10, 1) Fig. 25, 2.

3. Clay well levigated, wheel-thrown, burnished bright red, russety coat over painted design in white, design wavy parallel bands as shown in sketch. Height 6.8", greatest width 9.3", diameter of rim 3.8". Hunter Collection, Indian Section, Victoria and Albert Museum (5758 — 1901 J. S. M.). Fig. 25, 1.

4. Clay well levigated, wheel-thrown, slip of the same clay, russety coat over painted design in white, design wavy parallel bands on shoulder as shown in sketch. Height 5.2", greatest width 7", diameter of rim 3.1". Walhouse collection, British Museum, Department of Antiquities (73, 12 — 10, 2) Fig. 25, 4.

5. Clay well levigated, wheel-thrown, neck including rim and few pieces in the body missing, restored from bits, burnished red,

russety coat over painted design in white, design as shown in sketch. Height 5", greatest width 8.7". Walhouse Collection, British Museum Department of Antiquities. Fig. 25, 5.

6. Clay well levigated, wheel-thrown, slip of the same clay, burnished bright red outside and inside of neck, russety coat over painted design in white, design as shown in sketch. Height 4.4", greatest width 4.9", diameter of rim 2.3". Walhouse Collection, British Museum, Department of Antiquities. (73, 12 — 10, 3) Fig. 25, 6

Type H: Chalice:

1. Clay well levigated, wheel-thrown, wash of the same clay, burnished red outside and black inside, russety coat over painted design in white, design as shown in sketch. Height 4.25", greatest width 4.9", diameter of rim 4.3", diameter of base 3.4", in broken bits pieced together. Walhouse collection, British Museum, Department of Antiquities. Fig. 24, 4.

2. Clay well levigated, wheel-thrown, wash of the same clay, aperture at the junction of the cup and the stem sealed before firing, burnished red outside and black inside, russety coat over painted design in white, design as shown in sketch. Height 2.8", greateast width 3.4", diameter of base 2.2". Walhouse Collection, British Museum, Department of Antiquities (73 — 12 — 10, 32) Fig. 24, 7.

3. Clay well levigated, wheel-thrown as single unit and the aperture at junction of cup and stem sealed subsequently, but before firing, wash of the same clay, burnished red outside and black inside, russety coat over painted design in white, design as shown in sketch. Height 2.75", diameter of rim 2.65", diameter of base 2.25", pieced together from bits. Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 31) Fig . 24, 5.

4. Clay well levigated, wheel-thrown, wash of the same clay, burnished red outside and black inside, russety coat over painted design in white, design as shown in sketch. Height 3.5", greatest width 2.5", diameter of rim and base 2.2". Walhouse collection, British Museum, Department of Antiquities (73, 12—10, 29) Fig. 24. 8.

5. Clay well levigated, wheel-thrown, wash of the same clay, aperture at junction of cup and stem, sealed before firing, burnished

black inside and red outside, russety coat over painted design in white, design as shown in sketch. Height 3.5", greatest width 2.5", diameter of rim and base 2.5", pieced together from bits. Walhouse Collection British Museum, Department of Antiquities (73, 12—10, 30) Fig. 24. 6.

6. Clay well levigated, wheel-thrown as single unit and the aperture at the junction of cup and stem sealed before firing, wash of the same clay, burnished red outside and black inside, russety coat over painted design in white, design as shown in sketch. Height 2.9", greatest width 2.7", diameter of rim 2.6". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 27) Fig. 24. 9.

Type I: Jars:

1. Clay well levigated, wheel-thrown, slip of the same clay, burnished red outside and black inside, russety coat over painted design in white, design wavy parallel lines on shoulder as shown in sketch. Height 12.75", greatest width 1.3", diameter of rim 6.3", reconstructed from bits. Walhouse Collection, British Museum, Department of Antiquities. Fig. 25. 7.

2. Clay well levigated, wheel-thrown, burnished red outside and black inside, russety coat on design in white paint, design as shown in sketch. Walhouse Collection, British Museum, Department of Antiquities. Fig. 25. 8.

Type J: Flange-shouldered:

1. Clay well levigated, wheel-thrown, base beaten to shape, slip of the same clay, burnished bright red outside and black inside, slip with red burnish outside has peeled away, encircling bands in white under russety coat. Height 2", greatest width 2.5", diameter of rim 2.2". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 28).

2. Clay not well levigated, containing sand as degraissant, wheel-thrown, base beaten to shape, wash of the same clay, burnished red outside, upper half and inside of neck. Height 2.5", greatest width 3.9", diameter of rim 2.1". Walhouse Collection, British Museum, Department of Antiquities (73, 12 — 10, 11).

3. Clay not well levigated, contains sand as degraissant, wheel-thrown, wash of the same clay, burnished dark brown outside above the flange and inside of neck. Height 3.2", greatest width 4.4", diameter of rim 2.5", part of rim missing, perforated base. Hunter Collection, Indian Section, Victoria and Albert Museum. (5763 — 1901. J. S. M)

4. Clay well levigated, wheel-thrown, wash of the same clay, burnished dark grey outside above flange and inside of neck, three incised parallel encircling bands. Walhouse Collection, British Museum, Department of Antiquities.

Type L: Pot-stands:

1. Clay coarse, containing grains of stand, wheel-thrown, red slip, burnished. Height 2.75", diameter at base 4", diameter at top 5.8". Walhouse Collection, British Museum, Department of Antiquities, (73, 12-10, 44).

2. Clay well levigated, wheel-thrown, slip of the same clay, burnished black inside and out. Decoration three parallel corrugated bands outside. Height 3.8", diameter at base 6.1", diameter at top 5.9". Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 42).

3. Clay well levigated, wheel-thrown, wash of the same clay, burnished brown. Height 1.9", diameter at base 5.4", diameter at top 4.5". Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 45).

4. Clay well levigated, wheel-thrown, wash of the same clay, burnished brown inside and out. Height 2.25", diameter at base 5.5", diameter at top 4.25". Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 43).

5. Clay well levigated, wheel-thrown, wash of the same clay, burnished brown. Height 1.2", diameter of base 4.1", diameter at top 3.9". Walhouse Collection, British Museum, Department of Antiquaties (73, 12-10, 47).

6. Clay well levigated, wheel-thrown, slip of the same clay, burnished dull red inside and out. Height 2.4", diameter of base 5.5", diameter at top 4", pieced together from bits. Walhouse Collection, British Museum, Department of Antiquities.

7. Clay well levigated, wheel-thrown, wash of the same clay, burnished dark brown. Height 2.1", diameter at base 5.1", diameter at top 3.8". Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 64).

8. Clay well levigated, wheel-thrown, wash of the same clay, burnished brown and red. Height 1.8", diameter of base 4", diameter at top 3.1". Walhouse Collection, British Museum, Department of Antiqities (73. 12-10, 48).

9. Clay well levigated, wheel-thrown, burnished red with a black patch on body. Height 1.75", diameter of base 2.9", diameter at top 1.9". Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 50).

10. Clay well levigated, wheel-thrown, wash of the same clay, burnished brown outside and inside top. Height 2.8", diameter at base 3.9", diameter at top 3.8". Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 49).

Type N: Jar-covers:

1. Clay well levigated, wheel-thrown, wash of the same clay, burnished red over a lime base, inside coated with a mixture of lime and red paint. Height 2.35", diameter of base 2.35", badly fired. Walhouse Collection, British Museum, Department of Antiquities, (73, 12-10, 33).

2. Clay coarse, containing, sand as degraissant, wheel-thrown, wash of the same clay with lime, burnished red, but of the original polish little remains. Height 2", greatest width 2.75". Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 34).

Type O: Legged vessels:

1. Clay well levigated, wheel-thrown, wash of the same clay, burnished dark red, incised parallel encircling bands as shown in sketch. Height 9.6", greatest width 6", width of base 3", diameter of

rim 5.5", hard thick wall. standing on 4 legs. Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 24).

Type P: (b) Scored:

1. Clay well levigated, wheel-thrown, slip of the same clay with some lime added, burnished red, incised encircling band below nack Height 5.2", diameter of rim 4.1", greatest width 5.7", badly fired, bit from neck missing. Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 14).

(c) Ledge-necked:

1. Clay well levigated, wheel-thrown, wash of the same clay, burnished red outside and inside of neck, two parallel incised encircling bands. Height 7.6", greatest width 6.8, diameter of rim 3.2", thick wall, centre of gravity in the upper half. Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 13).

Type Q: Flower Pot:

1. Clay well levigated with some small grains of sand as degraissant, slip of the same clay including some carbonate of lime, wheel-thrown, burnished red. Height 4.35", diameter of rim 6.3", diameter of base 1.9", base badly fired. Walhouse Collection, British Museum, Department of Antiquities (73, 12-10, 23) Fig. 26, 17.

CHAPTER V

ADICHANALLUR AND THE ANTIQUITY OF IRON IN SOUTH INDIA

Adichanallur in Tirunelveli district, Tamilnadu, lies twelve miles to the South-East of Tirunelveli town and the archaeological site of that name lies on the south bank of the river Tamraparni and covers an area of over one hundred and fourteen acres. It was first noticed in the year 1876 by Dr. Jagor of Berlin who collected from sporadic excavations on the site a considerable number of articles for the Museum Fur Volker Kunde, Berlin. From 1899 to 1905 the site was excavated by Alexander Rea at intervals. M. Louis Lapique who visited the site and collected material from its cemetery thought that the urn-burial people of Adichanallur were 'Proto-Dravidians'.[1] The urn-burials characteristic of Adichanallur have been found all along the Kerala Coast and on the eastern side of the Western Ghats, besides at several localities in the Tirunelveli district, at several places in the Coimbatore, Tiruchirappalli, Madurai, Thanjavur and South Arcot districts associated with black or black-and-red pottery. The drift of the people who practised urn-burials in South India seems to have been along the West Coast and from Tirunelveli northward with a thrust through the Palghat gap into Coimbatore.

Many of the smaller vessels found both inside and outside the urns contained rice husks. Objects in metal included oval diadems and mouthpieces in gold, swords, daggers, spearheads, arrow heads, hoes, tridents and numerous representations of animals and vessels in bronze including colanders. The continuous use of the site over a long period of time is indicated by the fact that many urns were found over others below them. The site has been cut into two after it was deserted by a shift in the course of the river Tamraparni on the right

(to be concluded in the next issue)

THE PROFESSOR L. VENKATARATNAM ENDOWMENT LECTURES, 1971-'72

THE VEDAS UPANIṢADS AND THE BHAGAVAD-GĪTĀ THE PATH OF ACTION — KARMA YOGA

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The Vedas, the Upaniṣads and the Bhagavad-gītā constitute an interrelated and continuous literature. The Bhagavad-gītā expounds the three paths of Karma (action), Bhakti (devotion) and Jñāna (wisdom) and is called a Yogaśāstra because it harmonises and unifies them. The germs of these three paths can be traced back to the Upaniṣads and the Vedas. The Vedas depict the different phases of human activity and aspirations. All the activities, mental, moral and physical are aimed at living a full life enriched with all the good things of life.

The Vedas recognise superhuman powers personified as Gods-the *Devas* or Shining Ones-who are friends and benefactors. The men propitiate the gods through prayers and offerings and the latter, in turn, produce timely rains which are the source of prosperity by providing food for men and cattle. There is a continual process of *Give-and-take* between the worlds of men and gods; there is mutual trust and respect resulting in common good. This is referred to in the Bhagavad-gītā: "Devān bhāvayatānena te devā bhāvayantu vaḥ/ Parasparam bhāvayantaḥ śreyaḥ param avāpsyatha/(III-11).

The Vedas are profuse are well as diffused in their contents which embrace all the essential aspects of human life. They stress the need for constant activity, recommend devotion to the Gods and lay special emphasis on the acquisition of wisdom. The earlier portion dealing with different duties based on activity is called Karma-kāṇḍa or Pūrva-mīmāṁsā. The latter portion which is devoted to wisdom or the knowledge of the Supreme Being is called the Brahma-kāṇḍa, Jñāna-kāṇḍa, the Vedānta, Uttara-mīmāṁsā or the Upaniṣads. Its language is the cryptic and preganant language of long and silent meditation on the Supreme Being. The Upāsanā-kāṇḍa which consists of different types

of mental worship and meditation is the intermediate path leading to wisdom and is in the nature of the path of Devotion or Bhakti. (Sva-svarūpānusandhānam bhaktirityabhidhīyate/). The Bhagavad-gītā is a poetic presentation of the practical philosophy of Action, Devotion and Wisdom dealt with in the earlier literature, especially the Upaniṣads of which it can be called the very essence. If the Upaniṣads can be compared to cows, the Bhagavadgītā can be described as the milk. It is thus graphically stated :—

All the Upaniṣads are cows (Sarvopaniṣado gāvaḥ); the milker is the cow-herd's son (Kṛṣṇa) (Dogdhā Gopāla-nandanaḥ) ; the calf which is used by the milker for inducing the cow to yield milk is Arjunad (pārtho vatsaḥ); the taster of the milk is the man of good sense (Sudhīr bhoktā); the milk is the great and immortalising nectar of the Gītā (Dugdham gītāmṛtam mahat).

Kárma (n) and Dhárma(n) both being neuter forms, are similarly derived from√kṛ-to do and√dhṛ-to support. Anything that supports is Dhárma(n) (Tāni dharmāṇi prathamānyāsan= They were the first ordinances (supporters). Any kind of activity is Kárma(n). Karma-yoga is the activity that leads the doer through the proper path and unites him with the goal. Hence it refers to both the means and the end. It presupposes the activity which is well-planned and well-executed. It is called efficient action (Yogaḥ karmasu kauśalam).

Activity is the very essence of living. The Vedic seers were intensely practical and they wished for a full life of continued activity. They longed for a long life rich in cattle and heroic progeny and with perfect health with unimpaired faculties. Their conception of Karma-yoga is an active life rich in its rewards. In the Ṛg-veda, Karma and Yoga are used as synonyms. Yoga is effort without which there is no activity. The Vedic seer's aspiration is conveyed in a verse where he prays for a hundred years' span of life with unimpaired vision in order to witness the radiant rising Sun-the Eye of the sky. (RV. VII-66-16)

May we for a hundered autumns, see that lustrous ||
Eye (of the sky, the Sun) God-ordained, arise;
May we live for a hundred autumns.

(Tac cakṣur devahitam śukram uccarat| Paśyema śaradaḥ śatam, jīvema śaradaḥ śatam || RV. VII-66-16.

Being the most important among the faculties, the faculty of vision comprehends the other faculties also. This idea is expressed in the Śukla Yajur-veda (XXXVI-24) :—

May we live a hundred autumns.
May we hear for a hundred autumns.
May we speak well for a hundred autumns.
May we hold our heads high for a hundred autumns.
Yea, even beyond a hundred autumns.

(Paśyema śaradaḥ śatam, jīvema śaradaḥ śatam, śṛṇuyāma śaradaḥ śatam pra bravāma śaradaḥ śatam, adīnāḥ syāma śaradaḥ śatam, bhūyaśca śaradaḥ śatāt ||).

The Atharva-veda expands the idea still further. It adds to the prayer the ideas of knowledge, growth, prosperity and stability :—

Paśyema śaradaḥ śatam; Jīvema śaradaḥ śatam; Budhyema śaradaḥ śatam;
Rohema śaradaḥ śatam; Pūṣema śaradaḥ śatam; Bhavema śaradaḥ śatam; Bhūyema śaradaḥ satam; Bhūyasīḥ saradaḥ śatāt || (Ath. XIX-63)

For carrying on an efficient life of activity, the Atharva-veda prays for a sound body with unimpaired faculties and a sound soul (Ath. XIX-601)

May I have voice in my mouth, breath in my nostrils,
sight in my eyes, hearing in my ears ;
hair that has not turned gray, teeth that have not decayed,
and great strength in my arms.
May I have power in my thighs, swiftness in my legs,
steadfastness in my feet.
May all my members be uninjured and my soul unimpaired.

(Vāṅ ma āsan nasoḥ prāṇāḥ, cakṣur akṣṇoḥ śrotram karṇayoḥ |
Apalitāḥ keśāḥ aśoṇā dantāḥ bahū bāhvor balam ||
Ūrvor ojō jaṅghayor javaḥ padayoḥ |
Pratiṣṭhā | ariṣṭāni me sarvatmānibhṛṣṭaḥ || (Ath. XIX-601.)

A verse in the Ṛg-veda dedicated to Indra prays for the constituents of a happy life (RV. II-21-6)

O God, bestow on us the best treasures:
The efficient mind, and good fortune;
The increase of wealth, the health of bodies,
The sweetness of speech and the fairness of days.

(Indra śreṣthāni draviṇāni dhehi, cittim dakṣasya subhagatvam asme |
Poṣam rayīṇām ariṣṭiṁ tanūnām svādmānam vācaḥ sudinatvam ahnām || (RV. II-21-6)

The Yajur-veda (VIII-53) prays for richness in offspring, heroes and nourishing food:—

Earth, Ether, Sky,
May we be rich in offspring,
rich in heroes, rich in nourishing food |.

(Bhūr bhuvaḥ svaḥ, suprajāḥ prajābhiḥ syāma, suvīrāḥ, vīraiḥ, supuṣāḥ poṣaiḥ || (VIII-53)

The Ṛg-veda exhorts us to be always up and doing without compromising with evil and to heroically cross over the stream of life which is fraught with the pebbles of difficulties. (X-53-8). The Yajur-veda (XXXV-10) and the Atharva-veda (XII-2-26) also repeat and explain the same idea:—

The stream filled with stones, flows on;
Move together, rise up and cross over, my friends,
Here let us leave those who are opposed to good; and let us cross over to powers that are beneficent.

(Aśmanvatī rīyate saṁ rabhadhvam, Uttiṣṭhata pra taratā sakhāyaḥ Atrā jahāma ye asanna śevāḥ, śivān vayam uttaremābhi vājān | RV. X. 53-8)

The Ṛg-veda declares that Gods dislike the idle man and like the active person.

The Gods like the man who presses the juice (performs the ritual)
They do not like sleep (sloth); they, the unsleeping, punish indifference (RV. VIII-2-18)

(Icchanti devāḥ sunvantam. na svapnāya spṛhayanti |
Yanti pramādam atandrāḥ ||

Gods, befriend none but him who has toiled. (Na ṛte śrāntasya sakhyāya devāḥ). (RV. IV-33-11).

The path of action should be pursued taking a lesson from the Sun and the Moon, in strict conformity with the natural and moral Law. (RV. V-51-15)

We shall follow the path of righteousness like the Sun and the Moon. We shall associate again with the liberal, the kind and the wise.

(Svasti panthām anu carema sūryācandramasāviva)|| Punar dadatā aghnatā jānatā sam gamemahi || (RV. V-51-15).

The Vedas, in general, pray for the divinely ordained term of life with sound faculties directed towards what is good :—

Gods, may we listen with our ears to what is good,
and Holy Ones, see with our eyes, what is good ;
and may we, with firm limbs and bodies,
offering praise-songs to you,
enjoy the divinely ordained term of life.

(Bhadram karṇebhiḥ sṛṇuyāma devāḥ ; bhadram paśyemākṣabhir yajatrāḥ Sthirair angaiḥ tuṣṭuvāṁsas tanūbhir vyaśema devahitam yad āyuḥ) RV. I-89-8 ; VS. XXV-21.

The Yajur-veda prays for the goodness of the mind which is the spring of all action.

That which is the source of high knowledge, and is intellect
and the power of memory,
That which is the deathless flame within living beings
without which no action whatever is performed,
May that mind of mine will what is good.

(Yat prajñānam uta ceto dhṛtiśca, yajjyotir antar amṛtam prajāsu) Yasmānna ṛte kimcana karma kriyate, tanme manaḥ śivasamkalpam astu || VS. XXXIV-3.

The Ṛg-veda affirms that everything turns sweet to the person who lives according to the Eternal Law called Ṛta.

For one who lives according to Eternal Law, the winds are full of sweetness;
The rivers pour sweets; so may plants be full of sweetness for us;
Sweet be the night and sweet the dawns;
sweet the dust of the Earth;
sweet be our Father Heaven to us.

May the forest-tree be full of sweetness for us, and full of sweetness the Sun;
May the kine be full of sweetness for us.

(Madhu vātā ṛtāyate, madhu kṣaranti sindhavaḥ Mādhvir naḥ santvoṣadhiḥ.) ||
Madhu naktam utoṣaso, madhumat pārthivam rajaḥ | Madhu dyaur astu naḥ ptā
Madhumān no vanaspátir, madhumān astu sūryaḥ | Madhvir gāvo bhavantu naḥ || (RV. I-906.)

The Vedas personify human society as a Cosmic Being (Puruṣa) whose important limbs constitute the important Orders of society. The four types of activity enjoined on the four groups of men according to their natural aptitudes are Learning, governing, earning and assisting. The Upaniṣads also stress the need for a long life of a hundred years crowned with activity and enjoyment chastened by a spirit of sacrifice and freedom from greed for another's wealth. The Īśa Upaniṣad declares :—

All this is pervaded by the Lord,
each moving thing on this moving world.
Therefore enjoy through sacrifice.
Covet not anybody's wealth.

Yea, performing actions here,
desire to live a hundred years.
Thus for thee there is no other way,
and action does not besmirch men.

Īśāvāsyam idam sarvam, yat kim ca jagatyām jagat |
Tena tyaktena bhuñjīthāḥ mā grdhaḥ kasyasvid dhanam ||
Kurvanneveha karmāṇi jijīviṣet śatam samāḥ |
Evam tvayi nānyatheto' sti na karma lipyate nare ||

The above Upaniṣadic statement gives the essence of Karma-yoga, the doctrine of disinterested service to God who pervades everything. The Bhagavad-gītā explains the above idea of Karma-yoga in great detail. The Drama of the Bhagavad-gītā is enacted on the stage of Kurukṣetra. The stage is a battle-field where two forces springing from a common source, but differing in their nature are pitched against each other. They are cousins, blood-relations, representing virtue and vice, in the form of the Pāṇḍavas and Kauravas.

Arjuna, son of Pāṇḍu comes to the battle-field in a chariot yoked to four white horses and driven by Kṛṣṇa, his friend and spiritual guide. Surveying the warriors on either side, Arjuna sees his own kith and kin. The prospects of a bloody war leading to utter destruction and resultant sin haunt his mind. Extreme pity possesses him and he prefers to beg alms instead of taking arms agains his own blood-relations. The internal struggle completely overcame Arjuna and he sank at the back of his chariot casting off his weapons.

Arjuna was caught in the toils of grief and delusion śoka for his relations and Moha with regard to his immediate duty. On him depended the success of the Pāṇḍava-forces. There was hardly any time to pause and ponder. Immediate action was needed.

At this momentous moment, the great teacher Kṛṣṇa tenders him the advice needed. Arjuna was a pilgrim on the path of duty and spiritual progress and hence he had to be raised from the slough of Despond and made to act. Kṛṣṇa first tells him that his grief was unfounded. The body that is created is bound to perish sooner or later. But the soul within is immortal. One has to bear with the pairs of opposites associated with the body like heat and cold, pleasure and pain, because they come and go. This truth, however, cannot be easily understood and followed by those moving on a lower plane of spiritual consciousness. Arjuna, a kṣatriya, was a warrior more inclined by his nature and training to action than to introspection end contemplation. The context also demanded immediate action based on the fundamental wisdom on the nature of the perishable body and the immortal soul. Hence Kṛṣṇa initiates Arjuna into the path of action, Karma-yoga.

Kṛṣṇa says to Arjuna, "Your duty is to act, never to be concerned with the result. Let not the fruits of actions be your motive. Do

not let yourself be drawn into the path of non-action [1]. Engage your self in activities established in yoga, renouncing attachment and face with even composure success and failure. Equilibrium is yoga.[2]

The Lord further says, "It is in the nature of man to be engaged in some activity, mental or physical. He cannot but do it.[3] You are born as a man of action. Your name and fame is your highest prize, as a warrior[4]. If you retreat frem the batlle-field you will be branded as a coward and slighted.[5] Death or success in battle should be equally welcome to a Kṣatriya; for, in the former case you attain heaven, and in the latter case you rule over the kingdom." [6]

Kṛṣṇa exhorts Arjuna further, O, Arjuna, the leaders of men should set a worthy example for others to follow. Ordinary people follow them. You are a leader among the warriors and it ill behoves you to set a bad example. I have nothing new to acquire by participating in this war. But if I do not do action unremittingly, the people will choose the path of inaction leading to ruin[7]. On activity rests human existence. One's ordained duty is to be performed at all costs."

Inactivity is sin and it is committed by man being influenced by two great enemies called Kāma and Krodha[8]. They are insatiable and

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1. कर्मण्येवाधिकारस्ते मा फलेषु कदाचन ।
   मा कर्मफलहेतुर्भूर्मा ते सङ्गोऽस्त्वकर्मणि ॥ II-47
2. योगस्थः कुरु कर्माणि सङ्गं त्यक्त्वा धनञ्जय ।
   सिद्ध्यसिद्ध्योः समो भूत्वा समत्वं योग उच्यते ॥ II-48
3. न हि कश्चित् क्षणमपि जातु तिष्ठत्यकर्मकृत् ।
   कार्यते ह्यवशः कर्म सर्वः प्रकृतिजैर्गुणैः ॥ III-5
4. धर्म्याद्धि युद्धात् श्रेयोऽन्यत् क्षत्रियस्य न विद्यते ॥ II-31
5. भयाद्रणात् उपरतं मंस्यन्ते त्वां महारथीः ।
   येषां च त्वं बहुमतो भूत्वा यास्यसि लाघवम् ॥ II-35
6. हतो वा प्राप्स्यसि स्वर्गं, जित्वा वा भोक्ष्यसे महीम् ॥ II-37
7. यद्यदाचरति श्रेष्ठस्तत्तदेवेतरो जनः ।
   स यत् प्रमाणं कुरुते लोकस्तदनुवर्तते ॥ II-21
8. यदि ह्यहं न वर्तेय जातु कर्मण्यतन्द्रितः ।
   मम वर्त्मानुवर्तन्ते मनुष्याः पार्थ सर्वशः ॥
   उत्सीदेयुरिमे लोका न कुर्यां कर्म चेदहम् ॥ III-23–24

are strongly entrenched in the fortress of the senses.[9] They bind man to the objects of the world which yield transitory pleasures and concomitant pain through the five agents — the sense organs — led by the chief agent — the mind which controls them all. The irrepressible and fickle mind has to be controlled through constant practice and dispassion. Through that control of the mind, the other sense organs have to be controlled and through their control the great enemies of wisdom, Kāma and Krodha have to be vanquished.[10] Control of the mind results in a state of equipoise.

To encourage Arjuna on the path of action, Kṛṣṇa says, "O, Arjuna, in this path of action, nothing is wasted. The fruit is secure commensurate with the act. Even a little activity saves man from danger. Imperfection in action is no sin or disadvantage.[11]

Dedication is the key to detached action. That person is free from the tainting and binding fruits of action who has no desire for the fruit. And he is declared to be learned by the wise whose actions in their entirety are free from desire or attachment, because the fruits of action are burnt by the fire of knowledge.[12]

The Gītā emphasises that the activities of the world must go on. The good man does the tasks to which he is called and which appertain to his place in society. Every action of the individual should at once chasten his mind and conduce to the progress and prosperity of society. He does everything without any selfish motive and maintains equilibrium in success and failure, pleasure and pain, joy and sorrow. Thus purified, the good man is qualified for further progress by constant meditation, prayer and devotion and finally he sees himself in every-

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9. काम एष क्रोध एष रजोगुणसमुद्भवः ।
महाशनो महापाप्मा विद्ध्येनमिह वैरिणम् ॥ III-37

10. तस्मात् त्वमिन्द्रियाण्यादौ नियम्य भरतर्षभ ।
पाप्मानं प्रजहि ह्येनं ज्ञानविज्ञाननाशनम् ॥ III-41

11. नेहाभिक्रमनाशोऽस्ति प्रत्यवायो न विद्यते ।
स्वल्पमप्यस्य धर्मस्य त्रायते महतो भयात् ॥ II-40

12. यस्य सर्वे समारम्भाः कामसङ्कल्पवर्जिताः ।
ज्ञानाग्निदग्धकर्माणं तमाहुः पण्डितं बुधाः ॥ IV-19

thing and every thing in God. Yoga consists in living this dedicated life in the midst of worldly affairs.

Work (Action) is sublimated into worship (Yajña) when it is freed from the trammels of selfish desire. The Gītā does not ask us to abhor the common business of life, but demands the suppression of all selfish desires. It prescribes a harmonious combination of work (Pravṛtti) and detachment (Nivṛtti). What binds man is not work, but the spirit in which it is done. Action in the way indicated is "Skill in action".[13]

Being intent on his own duty, man reaches proper fulfilment.[14] Better is one's ordained duty though imperfectly done than the work of another even if well-performed. He who does the work conditioned by his own nature incurs no sin.[15] One's duty though defective should not be abandoned. All undertakings indeed are clouded by defects as fire by the smoke.[16] True renunciation and performance of work without desire for the fruit are identical because the essence of both is the giving up of personal desire. The Gītā definitely disapproves abstention from activity and renunciation of the world. They should come spontaneously. The soul does not attain freedom from action by refraining from activities. By mere abstention one does not attain action-lessness.[17] Helplessly is everyone propelled to action by his innate qualities.[18] Even when the external organs are restrained, the mind dwells on the objects of the senses. Action is better than non-action. Without work, living is impossible.[19]

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13. योगः कर्मसु कौशलम् ।
14. स्वे स्वे कर्मण्यभिरतः संसिद्धिं लभते नरः ॥ XVII-45
15. श्रेयान् स्वधर्मो विगुणः परधर्मात स्वनुष्ठितात् ।
    स्वभावनियतं कर्म कुर्वन्नाप्नोति किल्बिषम् ॥ XVIII-47
16. सहजं कर्म कौन्तेय सदोषमपि न त्यजेत् ।
    सर्वारम्भा हि कौन्तेय धूमेनाग्निरिवावृताः ॥ XVIII-48
17. न कर्मणामनारम्भात् नैष्कर्म्यं पुरुषोऽश्नुते ।
    न च सन्यसनादेव सिद्धिं समधिगच्छति ॥ III-4
18. कार्यते ह्यवशः कर्म सर्वः प्रकृतिजैर्गुणैः । III-5
19. नियतं कुरु कर्म त्वं, कर्म ज्यायो ह्यकर्मणः ।
    शरीरयात्रापि च ते न प्रसिद्ध्येदकर्मणः ॥ III-9

Inherited tendencies need expression in action. Repression causes the mind to run on, even when these tendencies are externally restrained. Such repression leads to hypocrisy and perversion of the mind. But the practice of the method of detachment trains the soul, without unnatural suppression, to liberate itself from the load of inherited qualities.

In the path of duty there is no waste of effort nor is there any danger of retrogression by reason of shortcomings in practice. Even a little of this dharma saves men from great evil.

The Path of Devotion

Devotion finds expression in the Vedic hyms in praise of Indra and other *devatās*; meditative devotion is contained in the *Upāsanā* section of the Upaniṣads and devotion with its varying degrees of intensity facilitated by the concept of Avatārs and Iṭṣa-devatā leading to knowledge is elaborated in the Epics and Purāṇas.

Devotion is self-forgetting love for God. In the Vedas, God is conceived in many forms expressing different types of relationship with the devotee as Father (Pitā) Mother (Mātā) Protector (Trātā), etc. He is prayed to for divine bliss (Svasti), help (Ūti) and protection (Śarman)

In Ṛg-veda (IV-17-17) Indra is addressed as Saviour, Friend and Father :—

Be Thou our Saviour,: show Thyself our own,
Looking after and showing mercy to the worshippers.

Friend, Father, Fatherliest of fathers,
Giving to the loving worshipper free space and vital power.

(Trātā no bodhi dadṛśāna āpir, abhikhyātā marḍitā somyānām |
Sakhā pitā pitṛtamaḥ pitṛṇām kartemu lokam uśate vayodhāḥ ||

The Ṛg, Yajus and Atharva vedas speak of God as Father (pitā), Creator, (janitā), Disposer (vidhātā) and as the One bearing the names of many deities :—

Yo naḥ pitā janitā yo vidhātā, dhāmāni veda bhuvanāni viśvā |
Yo devānām nāmadhā eka eva, tam sampraśnam bhuvanā yantyanya || (RV. X-82-3-; YV. XVII-27; Ath. II-1-3.)

He is also spoken of as a kinsman (bandhu) and brother (bhrātā) (Vs. XXXII-10; RV. X-186-2) :—

The Ṛg-veda refers to purity as the essence of devotion :—

Come now and let us pray to the Deity who is pure with pure Sāma-hymn
Him who is glorified by pure praise-songs;
May the pure, blissful One be pleased.

(Eto nvindram stavāma śuddham śuddhena sāmnā |

Śuddhair ukthaiḥ vāvṛdhvāmsam śuddha āsīrvān mamattu || VIII-95-7.)

The vedas invoke Indra as the Protecter and Saviour (Trātā; Avitā) :—

God, the Rescuer, God the Saviour, Mighty God, happily invoked at each invocation,
God, Powerful, invoked of many, I invoke,
May God, the Bounteous, confer on us blessing.

(Trātāram indram avitāram indram have have suhavam śūram indram |

Hvayāmi śakram puruhūtam indram svasti no maghavā dhātvindraḥ ||) (Rv. VI-47-11; Sv. 333; VS. XX-50; Ath. V. VII-86-1)

Agni is metaphorically praised as a Fountain in a desert (Dhanvanniva prapā asi tvam agne. (RV. X-4-1). The worshipper, invoking the divine Mother Sarasvatī says that he approaches her as he would a Tree for shelter. (Tava śarman priyatame dadhānā upa stheyāma śaraṇam na vṛkṣam || RV. VII-95-5) Indra's grace (sumna) is sought in a verse :—

Bounteous One, Thou art our Father, and our Mother, O lord, Thou hast been. Now we pray for Thy grace.

(Tvam hi naḥ pitā vaso, tvam mātā śatakrato babhuvitha |
Athā te sumnam īmahe || (RV. VIII-98-11; Ath. V. XX-108-2).

In Ṛg-veda (X-7-3) Agni is described as Father, kinsman, brother and friend, all rolled into one.

The Deity I deem my Father, my kinsman, my Brother, deem him my Friend, for ever.

(Agnim manye pitaram agnim āpim bhrātaram sadamit sakhāyam|)

If God is the Father, the devotee is the son :—

O mighty God, with the sweetest song,
I clasp Thy garment's hem as a child grasps his father's.

Pitur na putraḥ sicam ā rabhe ta Indra svādiṣṭhayā girā śacīvaḥ. (RV. III-53-2):

The Mother who feeds the child with milk is Sarasvatī as well as Uṣas. (RV. I-164-49; VII-81-4)

The sages are said to caress and kiss God as a child with their hymns. (RV. X-123-1; IX-85-11)

This Vātsalya (endearment) aspect of devotion is quite evident in the devotional epics where the elderly women like the *gopis* love the divine child kṛṣṇa forgetting themselves.

The devotee offers himself to God and claims God as his possession :—

Supported by thee, O God, may we answer all who defy us.

Thou art ours, and we are Thine (RV. VIII-92-32)

(Tvayed indra yujā vayam prati bruvīmahi spṛdhaḥ |

Tvam asmākam tava smasi || RV. VIII-92-32)

In the Upaniṣads, there are directions for meditating on the Sun, Space, Light, Fire, Wind, etc., as representing the Supreme Soul. This has led to the concept of an Iṣṭa-devatā according to which a god or goddess of one's choice is worshipped as the representative of the Supreme Reality. The Conception of Avatārs, like Rāma, Kṛṣṇa also helps in meditating on one's Iṣta-devatā. The Udgītha Upāsanā referred to in the Chāndogya Upaniṣad prescribes meditation on the Supreme Reality as *Omkāra*. God can be meditated upon in any of his manifested forms of which some are mentioned in the Vibhūti-yoga chapter in the Bhagavad-gītā.

Bhakti-yoga, the Path of Devotion is the connecting link between the paths of Karma and Jñāna. It is the immediate fruit of the flower of Karma. And, in relation to the fruit of Jñāna, Bhakti is the flower. It is the highest type of love and finds fulfilment in itself. It is disinterested love for the most loveable entity called God. He is the Highest Spirit-Puruṣottama-in His Cosmic form-Viśvarūpa comprehending everything. A speck of His glory can be realised in all the excellent objects of the world.[20]

Devotion gets more and more chastened and intensified the more love is drawn away from the little self of man and directed towards the Supreme Self called God. Bhakti (devotion) is a relative term and has two aspects-the subject and the object. The object is God, preferably in His personal concrete aspect, to begin with, for the ordinary devotee. At the initial stages, devotion implies dualism rooted in the relationship between the servant full of Faith and the Master full of grace. Embodied beings find it easier and more natural to fix their thoughts on God brought nearer to their heart in His personal aspect. Man likes to think of God as embodied like himself. Contemplation on the Cosmic Impersonal aspect of God demands greater discipline and is difficult for the aspirant soaked in body-consciousness.[21] Visualising the formless aspect of the Supreme (Nirguṇabrahman) and getting absorbed therein registers the highest stage of the Path of devotion and is one of the advanced stages in the Path of Wisdom-Jñāna-yoga.

The pervading and controlling Lord is called Īśvara in the Bhagavad-gītā. All the worlds are sustained by Him. In Him they are strung like gems in the supporting string[22]. He is the seed and essence of all beings. He is the Lord of all mental dispositions caused by Prakṛti and those who take refuge in Him become free from delusion—not others who shun Him in their ignorance.

There are four types of devotees, all virtuous, who worship the Lord—the man in distress, the man seeking wisdom, the man seek-

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20. विष्टभ्याहमिदं कृत्स्नमेकांशेन स्थितो जगत्।
21. क्लेशोऽधिकतरस्तेषामव्यक्तासक्तचेतसाम्।
अव्यक्ता हि गतिर्दुःखं देहवद्भिरवाप्यते॥ XI-5
22. मयि सर्वमिदं प्रोतं सूत्रे मणिगणा इव।

ing wealth and the man of wisdom[23]. Bargaining for some benefit detracts from the value of devotion since the mind is diverted away from the object of devotion by the intervening desire. No doubt, devotion is better than no devotion at all, since there is scope and hope for refinement in the devotee. But the devotee of true wisdom and unswerving and disinterested devotion is dearest to the Lord and hence the best among them.

The Lord of the Gītā is the embodiment of grace and tolerance. Since He is immanent in all forms of gods, the Lord approves of His worship in any form fortified by faith.[24] There should be scope for the satisfaction of different tastes and mental dispositions. It can be said that the Lord dispenses the desired objects to the devotees through the retail-agency of those individual gods.

Even the smallest offering of the pure-hearted is accepted by the Lord.[25] Devotion consists in offering all our activities in a spirit of dedication to the Lord. Man starts on his spiritual life when he begins to dedicate his everything to God. The external offering is only the symbol of the spirit of sacrifice that enriches the mind.

In the path of devotion, the Lord in His infinite mercy does not condemn even the sinner though he commends the saint. The former ceases to be a sinner the moment his undeviating devotion is directed to the Lord.[26] The devotee is on the right path and never gets lost.[27] Even those of imperfect birth and deficient minds attain perfection

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23. चतुर्विधा भजन्ते मां जनाः सुकृतिनोऽर्जुन ।
आर्तो जिज्ञासुरर्थार्थी ज्ञानी च भरतर्षभ ॥ VII-16
तेषां ज्ञानी नित्ययुक्तः एकभक्तिर्विशिष्यते ।
प्रियो हि ज्ञानिनोऽत्यर्थमहं स च मम प्रियः ॥ VII-17

24. यो यो यां यां तनुं भक्तः श्रद्धयार्चितुमिच्छति ।
तस्य तस्याचलां श्रद्धां तामेव विदधाम्यहम् ॥ VII-21

25. पत्रं पुष्पं फलं तोयं यो मे भक्त्या प्रयच्छति ।
तदहं भक्त्युपहृतमश्नामि प्रयतात्मनः ॥ IX-26

26. अपि चेत्सुदुराचारो भजते मामनन्य भाक् ।
साधुरेव स मन्तव्यः सम्यग्व्यवसितो हि सः ॥ IX-30

27. क्षिप्रं भवति धर्मात्मा शश्वच्छान्तिं निगच्छति ।
कौन्तेय प्रतिजानीहि न मे भक्तः प्रणश्यति ॥ IX-31

through devotion to the Lord. What need be said about the fully developed men of wisdom?

Towards the end Ch. IX. the Lord exhorts Arjuna to fix his mind steadfastly on Him with devotion and humility.[28] For fostering devotion in Arjuna's mind, the Lord's glories are detailed in the next chapter. Arjuna wants to know the Lord's glory in order to concentrate his mind on them. The Lord is the Source of everything and the surce of all qualities that living beings possess-intellect, wisdom, self-restraint, contentment, etc., There is no end to His manifestations and the glory inherent in them. He is the inner-most self of all living beings. Immanent in all types of creation, the Lord stands for the best in each genus.[29] In short, it is a speck of the Lord's splendour that has given birth to all that is glorious, prosperous and powerful. With a single fragment of His Self, He stands supporting the whole Universe.[30] At Arjuna's request, the Lord vouchsafes His Cosmic Form (Viśva-rūpa) to him. There Arjuna beheld the whole Universe with its many divisions, drawn together into one. Unswerving devotion is the only way through which this form of the Lord can be known seen in reality and entered into.[31]

The Lord says to Arjuna with the solicitude of a Guru for his disciple :—"Fix your mind on me alone; let your thoughts dwell in me.[32] Thereafter you will live in me alone.

If you are not able to fix your mind steadily on me, then seek to reach me through constant practice (abhyāsa-yoga).[33] If you are not

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28. मन्मना भव मद्भक्तो मद्याजी मां नमस्कुरु । IX-34
29. अहमात्मा गुडाकेश सर्वभूताशयस्थित: । X-20
30. यद्यद्विभूतिमत् सत्त्वं श्रीमदूर्जितमेव वा ।
तत्तदेवावगच्छ त्वं मम तेजोंशसम्भवम् ॥ X-41
विष्टभ्याहमिदं कृत्स्नमेकांशेन स्थितो जगत् । X-42
31. भक्त्या त्वनन्यया शक्य अहमेवंविधोऽर्जुन ।
ज्ञातुं द्रष्टुं च तत्त्वेन प्रवेष्टुं च परंतप ॥ XI-54
32. मय्येव मन आधत्स्व मयि बुद्धिं निवेशय ।
निवसिष्यसि मय्येव अत ऊर्ध्वं न संशय: ॥ XII-87
33. अथ चित्तं समाधातुं न शक्नोषि मयि स्थिरम् ।
अभ्यासयोगेन ततो मामिच्छाप्तुं धनञ्जय ॥ XII-9

skilled in the practice, then be intent on doing action for my sake. You will attain perfection.[34] If you are not able to do even this-then, taking refuge in me, abondon the fruits of all actions with the self subdued.[35] Awareness of the essential purpose of religious practice is better than formal religious practice (abhyāsa) ; better than that knowledge is meditation (dhyāna) on the truth that it is Divinity that is manifesting itself through all beings; better than that meditation is the renunciation of the fruit of action. Peace follows in the wake of that renunciation.[36] The devotee is dear to the Lord. His inherent characteristics are mentioned in verses 13 to 19 of Chapter XII. Not hating any creature, he is friendly and compassionate to all. Free from the sense of possession and egoism, he is balanced in pleasure and pain and is forgiving.[37] Ever contented and steady in meditation, self-controlled and of firm conviction, he has his mind and intellect fixed on me.[38] The world does not recoil from him, nor does he from it (being friendly to all) and he is free from joy and anger fear and anxiety.[39] Free from any wants, he is pure and prompt, unconcerned, untroubled and also self-less in all his undertakings.[40] Free from rejoicing and hatred, from grief and desire, he renounces the notions of both good and evil.[41] He is the same to foe and friend, to honour and dishon-

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34. अभ्यासेऽप्यसमर्थोऽसि मत्कर्मपरमो भव ।
मदर्थमपि कर्माणि कुर्वन् सिद्धिमवाप्स्यसि ॥ XII-10

35. अथैतदप्यशक्तोऽसि कर्तुं मद्योगमाश्रितः ।
सर्वकर्मफलत्यागं ततः कुरु यतात्मवान् ॥ XII-11

36. श्रेयो हि ज्ञानमभ्यासात् ज्ञानात् ध्यानं विशिष्यते ।
ध्यानात् कर्मफलत्यागः त्यागात् शान्तिरनन्तरम् ॥ XII-12

37. अद्वेष्टा सर्वभूतानां मैत्रः करुण एव च ।
निर्ममो निरहङ्कारः समदुःखसुखः क्षमी ॥ XII-13

38. सन्तुष्टः सततं योगी यतात्मा दृढनिश्चयः ।
मय्यर्पितमनोबुद्धि र्यो मद्भक्तः स मे प्रियः ॥ 14

39. यस्मान्नोद्विजते लोकः लोकान्नोद्विजते च यः ।
हर्षामर्षभयोद्वेगैर्मुक्तो यः स च मे प्रियः ॥ 15

40. अनपेक्षः शुचिर्दक्षः उदासीनो गतव्यथः ।
सर्वारम्भपरित्यागी यो मद्भक्तः स मे प्रियः॥ 16

41. यो न हृष्यति न द्वेष्टि न शोचति न काङ्क्षति ।
शुभाशुभपरित्यागी भक्तिमान् यः स मे प्रियः ॥ 17

our, to cold and heat, to pleasure and pain and is free from attachment.[42] To him censure and praise are equal: he is silent and is contented with whatever he gets. With no fixed home, he is steady-minded.[43]

Chapters VI to XII of the Gītā are devoted to the definition of God and the cultivation of devotion. The path of devotion indicates the Law of the right activity of the emotional side of man. Bhakti is emotional attachment distinct from knowledge or action. Emotion expresses a living relation between individuals and becomes instinct with the force of religious feeling when it binds God and man.

The path of devotion is open to all-the weak and the lowly, the literate and the illiterate and is also the easiest. The sacrifice called love is not so difficult as the tuning of the will to the divine purpose (karma-yoga) or ascetic discipline (dhyāna-yoga) or the strenuous effort of thinking (Jñāna-yoga). It is as effective as any other method and is sometimes said to be excellent since it is its own fruition. Devotion to the supreme is easier with a personal God, a concrete entity full of bliss and beauty. The Gītā, however, recognises Nirguṇa-bhakti or devotion to the qualityless as superior to all else. Then the Absolute becomes the most ultimate category. When devotion is perfected, the devotee and his God become suffused into one spiritual ecstasy and reveal themselves as aspects of one life. Absolute monism is therefore the completion of the dualism with which the devotional consciousness starts.

The Path of Knowledge (Jñāna-yoga)

Spiritual wisdom marks the crowning achievement of human life. It is prayed for in the form of intelligence (dhî) talent (medhā) wisdom (kratu) and efficiency (dakṣa) in the vedic hymns. The man of knowledge is called *vipra* (wise), *kavi* (poet-philosopher) and *ṛsi* (sage). Wisdom and enlightenment are prayed for in a hymn addressed to Indra (RV VII-32-26)

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42. समः शत्रौ च मित्रे च तथा मानावमानयोः ।
शीतोष्णसुखदुःखेषु समः सङ्गविवर्जितः ॥ 18

43. तुल्यनिन्दास्तुतिर्मौनी सन्तुष्टो येनकेनचित् ।
अनिकेतः स्थिरमतिर्भक्तिमान् मे प्रियो नरः ॥ 19

God (Indra) give us wisdom as a father gives wisdom to his sons.

Guide us O, Much-invoked, in this path. May we live and have light.

Indra kratum na ābhara pitā putrebhyo yathā |

Śikṣā ṇo asmin puruhūta yāmani jīvā jyotir āsīmahi ||

RV. VII-32-26; SV. 259; 1456; AV. XVIII-3-67; XX-79-1.

The stimulation of the mental and intellectual power is sought in the celebrated ṛk in the Gāyatrī metre addressed to Savitā :—

We contemplate that adorable glory of Savitā.

May He stimulate our thoughts.

Tat savitur vareṇyam bhargo devasya dhīmahi | Dhiyo yo naḥ pracodayāt || RV. III-62-10; SV. 1462; VS. XXXVI-3; XXII-9; XXX-2).

Dhī (Thinking faculty) is to the mind what *cakṣus* (eye) is to the body. Agni is prayed for *medhā* talent, retentive memory :—

That talent which the group of gods and fore-fathers enjoy,

With that, O Agni make me wise to-day, Hail.

Yām medhām deva-gaṇah pitaraścopāsate | Taya māmadya medhayāgne medhāvinam kuru svāha || VS. (XXXII-14.)

The search for spiritual wisdom rooted in self-discipline is termed *brahmacarya* which makes the king fit to protect the country, the teacher to retain his disciple, the maiden to obtain a youthful husband, the gods to drive away death and Indra to bestow celestial lustre on the gods. The greatness of brahmacarya is emphasised in many places in the Atharva-veda :—

Brahmacaryeṇa tapasā rājā rāṣṭram vi rakṣati |

Ācāryo brahmacaryeṇa brahmacāriṇam icchate ||

Brahmacaryeṇa kanyā yuvānam vindate patim |

Brahmacaryeṇa tapasā devā mṛtyum apāghnata |

Indro ha brahmacaryeṇa devebhyaḥ svar ābharat ||

Ath. V, XI-5-17 to 19.

The knowledge of the Inner Self called parā-vidyā is extolled in the Upaniṣads.

In Muṇḍakopaniṣad Aṅgiras in his reply to the query of śaunaka refers to two *vidyās* which are to be known. They are parā superior and aparā, comparatively lower. *Aparā vidyā* is knowledge of the Vedas and Vedāṅgas. Parā — Vidyā is what leads to the knowledge of the Ātman, Self, which is imperishable. Atha parā yayā tad akṣaram adhigamyate. (Mund. 1. 15). The upaniṣads declare the Ātman to be subtle, great, all-pervading and eternal. The self is smaller than the small and greater than the great. (Kaṭh. II-20) The self pervades all things just as the butter is contained in milk (Śvet. Up; Sarva-vyāpinam ātmānam kṣīre sarpirivārpitam...(I-16) It is immortal (Na jāyate mriyate vā vipaścit nāyam kutaścit na babhūva kaścit | Ajo nityaḥ śāśvato, yam purāṇo na hanyate hanyamāne śarīre || (Kaṭh. II-18). All these ideas are elaborated in the Bhagavad-gītā in appropriate places especially in Ch. II.

Chapter XIII of the Gītā deals with the different aspects of know-ledge. There are two entities-the Self and the Non-self. The Non-self is called Prakṛti (Nature) or Kṣetra (the field of Nature). It is non-sentient. The Self is Puruṣa or Kṣetrajña the sentient principle. The Puruṣa identifies Himself with the Prakṛti and fancies that its characteristics are all His own. He is called jīvātman and he identi-fies himself with the Prakṛti that he handles. The differentiation in Prakṛti is infinite ; for this reason the Jīvātman is also infinite.

Jñāna consists in the true understanding of both *kṣetra,* the Universe and *ksetrajña,* the Lord of the Universe. The knowledge of the former is *Aparā-vidyā* or vijñāna. The latter is *parā-vidyā* or the knowledge 'par excellence'. It is *Brahma-jñāna-*. Enquiry commences with a diligent study of Nature and culminates in the knowledge of the Lord of Nature.

The integrated knowledge of the world and God is not acquired by mere book-learning. It is the outcome of intuition based on the way of living rooted in self-culture. The essentials of self-culture are mentioned in verses 7 to 11 of chapter XIII. Humility, self-control, dispassion, detachment, equanimity, unswerving devotion and constancy

in self-knowledge are some of them. The opposites of these draw a person away from the path of true wisdom.[44]

The thirteenth chapter deals with the Ātman which is to be known. Verses 12 to 17 describe *It* as the supreme Brahman. It is beginning-less, all-pervading and undivided by the manifested forms.[45] The devotee of Īśvara is able to realise Brahman. It is jñāna when man understands that God alone is revealing Himself as every thing. Being soaked in the thought of God, the devotee lives in Him.

Chapter XIV deals with the three guṇas, *sattva*, *rajas* and *tamas* associated with Prakṛti. Sattva is in the nature of light and is conducive to knowledge. The jīvātman resides in the body which harbours the mind which is made up of the three *guṇas*; but his ideal is, not to identify himself with the body. A person who is free from body-consciousness even when dwelling within the body is called *Jīvan-mukta.* Fixed as he is in the bliss of Brahman he has virtually transcended the three *guṇas*. The characteristics of a *guṇātīta* are dealt with in verses 22 to 26.[46]

Chapter XV of the Gītā deals with the two facets of Brahman (Puruṣa)—the perishable (Kṣara) and the imperishable (akṣra). All beings are perishable. Iśvara, the changeless is imperishable.[47]

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44. अमानित्वमदम्भित्वमहिंसा क्षान्तिरार्जवम् ।
आचार्योपासनं शौचं स्थैर्यमात्मविनिग्रह: ॥ XIII-7 ... ...
अध्यात्म ज्ञाननित्यत्वं तत्त्वज्ञानार्थदर्शनम् ।
एतत् ज्ञानमिति प्रोक्तमज्ञानं यदतोऽन्यथा ॥ XIII-12

45. अनादिमत् पर ब्रह्म न सत्तन्नासदुच्यते । XIII-12
....
ज्योतिषामपि तज्ज्योतिस्तमस: परमुच्यते ।
ज्ञानं ज्ञेयं ज्ञानगम्यं हृदि सर्वस्य विष्ठितम् ॥ XIII-17

46. प्रकाशं च प्रवृत्तिं च मोहमेव च पाण्डव ।
न द्वेष्टि संप्रवृत्तानि न निवृत्तानि काङ्क्षति ॥ XIV-22
....
मां च योऽव्यभिचारेण भक्तियोगेन सेवते ।
स गुणान् समतीत्यैतान् ब्रह्मभूयाय कल्पते ॥ XIV-26

47. द्वाविमौ पुरुषौ लोके क्षरश्चाक्षर एव च ।
क्षर: सर्वाणि भूतानि कूटस्थोऽक्षर उच्यते ॥ XV-16

This Īśvara assumes different theological names like Śiva, Nārāyaṇa, etc., But distinct is the Supreme Puruṣa called Puruṣottama, the indestructible Lord. He pervades and sustains the three worlds.[48] *Īśvara* is the Brahman with attributes (saguṇa). *Paramātman* is the Brahman without attributes (nirguṇa). The goal in life of the *Jivātman* is to make himself over to the *Paramātman.* The Prakṛti-aspect in him is surrendered to *Īśvara* or Saguṇa-brahman; the Puruṣa-aspect in him merges in Nirguṇa brahman just as the space in a pot merges in the cosmic space when the pot is broken.

He who has realised Brahman is a *Jñānin.* All his duties and obligations terminate with the realisation of Brahman. And there is no duty superior to the enlightenment in Brahman. There is no ideal superior to *Brahma-vidyā.* There is no attainment superior to that of Brahman and that is *Mukti.*

Spiritual life progresses along the paths of disinterested action (niṣkāma-karma) and devotion (bhakti) and reaches its culmination in *Jñāna.* But there is no distinct line of demarcation between one phase and the succeeding one. The steps are not discernible in the spiritual ladder. It is a gradually rising Mount that leads to the realisatton of the Supreme Reality called Brahman, or God.

Essential teachings of the Gītā

The Bhagavad-gītā shows to man the path for leading a good life. Man is essentially good and divine. But the ordinary man occupies a place be ween the gods and demons. He must strive to reach the divine status by eschewing the demoniacal nature springing from unfettered desire and passion. He must lead a god-centred life by imbibing the divine qualities characterised by self-sacrifice, devotion and spiritualism. He must avoid the ego-centered life of seeking pleasures at the cost of others and harming those who come in the way. These ideas are graphically dealt with in Chapter. XVI.

Man should develop the best mental disposition called sattva which promotes the welfare of himself and others, with regard to food (āhāra), worship (yajña) austerity (tapas) and charity (dānam).

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48. उत्तमः पुरुषस्त्वन्यः परमात्मेत्युदाहृतः ।
यो लोकत्रयमाविश्य बिभर्त्यव्यय ईश्वरः ॥ XV-17

The sāttvika type of austerity (tapas) pertains to the body, speech and mind. The worship of the great and the wise, purity, uprightness, continence and non-injury are physical austerities.[49] The speech that causes no disgust, which is truthful, pleasant and beneficial and also the practice of reciting the prescribed sacred texts constitute the austerity of speech.[50] Mental austerity consists in serenity of mind, gentleness, silence, self-control and purity of the mind.[51] The acting man is always engaged in one or more of these activities and should strive to adopt the above guide-lines for disciplined action. These ideas are elaborated in chapter XVII.

The renunciation of desire-ridden actions is termed *sannyāsa.* The abandonment of the fruits of all works is *Tyāga.*[52] Acts of yajña gift and austerity should be performed positively. They are purifying.[53] Maximum good to all concerned emanates from these meritorious acts. The best type of knowledge sees the imperishable in all beings as undivided in the divided.[54] The best action is that done as ordained without attachment, love or hatred and without any desire for the fruit.[55] The best agent is he who is free from attachment and egoism, who is full of firmness and zeal

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49. देवद्विजगुरुप्राज्ञपूजनं शौचमार्जवम् ।
ब्रह्मचर्यमहिंसा च शारीर तप उच्यते ॥ 14

50. अनुद्वेगकरं वाक्यं सत्यं प्रियहितं च यत् ।
स्वाध्यायाभ्यसनं चैव वाङ्मयं तप उच्यते ॥ 15

51. मन: प्रसाद: सौम्यत्वं मौनमात्मविनिग्रह: ।
भावसशुद्धिरित्येतत् तपो मानसमुच्यते ॥ 16

52. काम्यानां कर्मणां न्यास सन्यास कवयो विदु: ।
सर्वकर्मफलत्यागं प्राहुस्त्यागं विचक्षणा: ॥ XVIII-2

53. यज्ञदानतप:कर्म न त्याज्यं कार्यमेव तत् ।
यज्ञो दानं तपश्चैव पावनानि मनीषिणाम् ॥ 5

54. सर्वभूतेषु येनैकं भावमव्ययमीक्षते ।
अविभक्तं विभक्तेषु तज्ज्ञानं विद्धि सात्विकम् ॥ 20

55. नियतं सङ्गरहितमरागद्वेषत: कृतम् ।
अफलप्रेप्सुना कर्म यत्तत् सात्त्विकमुच्यते ॥ 23

and is unfettered by success or failure.[56] The best intellect is able to grasp the paths of work and renunciation, right and wrong action, etc.[57] The functions of the mind, prāṇa and the mind are well-regulated through ideal firmness.[58] True happiness is sweet in the end after undergoing bitter experience and coming as a result of self-realisation.[59] The duties of the pillars of society are based on their taste and abilities. The Dharma of one is as sacred and conducive to happiness as that of the other. Devoted to his own ordained duty, man attains the highest perfection.[60]

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56. मुक्तसङ्गोऽनहंवादी धृत्युत्साहसमन्वित: ।
 सिद्ध्यसिद्ध्योर्निर्विकार: कर्ता सात्त्विक उच्यते ॥ 26

57. प्रवृत्तिं च निवृत्तिं च कार्याकार्यौं भयाभये ।
 बन्धं मोक्षं च या वेत्ति बुद्धि: सा पार्थ सात्त्विकी ॥ 30

58. धृत्या यया धारयते मन:प्राणेन्द्रियक्रिया: ।
 योगेनाव्यभिचारिण्या धृति: सा पार्थ सात्त्विकी ॥ 33

59. यत्तदग्रे विषमिव परिणामेऽमृतोपमम् ।
 तत्सुखं सात्त्विकं प्रोक्तमात्मबुद्धिप्रसादजम् ॥ 37

60. स्वे स्वे कर्मण्यभिरत: संसिद्धिं लभते नर: ॥ XVIII-45

PART II

PROBLEMS OF DATA COLLECTION FOR A FOREIGN SCHOLAR DOING RESEARCH IN INDIA*

By MARSHALL M. BOUTON

*(This article is largely the result of the efforts and encouragement of Dr. C. A. Perumal, Professor and Head, Department of Politics and Public Administration, University of Madras. Dr. Perumal, who is the Research Guide for my Ph. D. Dissertation research in India and with whose Department I am affiliated, encouraged me to reflect on this subject and put my thoughts down on paper. He then arranged an opportunity for me to share these thoughts with some other students and faculty of the University of Madras. That Seminar resulted in this small essay which he has asked me to offer for publication in the University Journal. In general, I am also indebted to Dr. Perumal for his good guidance and support in my research work. I also wish to express my gratitude to Mr. S. Ramanathan of the same Department for his assistance.)

As an American post-graduate student now doing Ph. D. dissertation research in India, I am of course encountering problems that are common to all social scientists engaged in research, as well as problems that are particular to an American scholar doing research in India, and to my own specialised research program. In this essay I would like to discuss very informally the second set of problems, the problems of an American, or, in general, foreign, scholar conducting research in India. But this can only be done in the context of problems common to all social science researchers, and particular to my own subject. The influence of the latter will be only suggested by the examples I choose to illustrate my more general points. Thus, the reader should be informed that I am conducting research on "The Socio-Economic Consequences of Technological Change in Agriculture in Thanjavur District, Tamil Nadu."

What I am more concerned with is how the problems of an American or any other foreign scholar doing research in India or any other society other than his own can be described and interpreted in terms common to all social scientists. Many problems of data collec-

tion are obviously common to all social scientists engaged in research around the world, regardless of whether they are working in their own or other societies. For instance, any serious researcher must take the simple steps of first deciding what it is he wants to study and why, then what kinds of information he needs in order to study that subject. Next he has to design the instruments or methods he will use in collecting the relevant data, and then he must actually go into the field and get the data. And I think we can say that increasingly social scientists around the world are adopting common approaches and methods in dealing with these research tasks and their associated problems. The world of social science research has certainly become more closely-knit over the past 20-25 years.

Unfortunately, however, this has often been at the expense of the very objectivity that is central to the idea of "social science." For many of the assumptions and methods of modern social science developed in Western societies have been exported and used unthinkingly in other societies. These assumptions and methods have not at all been free of the influences of the society and culture in which they were developed, and of the biases and preconceptions that flow from them. We must recognize that much of the research, analysis and conclusions that has gone under the heading of social science, supposedly free from bias, has in fact been quite ethnocentric. The results are not only scientifically questionable, but also can be and, very unfortunately, in some cases have been used exploitatively. American scholars studying India have certainly been as guilty, if not more so, of this kind of error as any others. For instance, most if not all of the research and writing by American scholars on "Modernisation" is now quite justly under a dark cloud of suspicion both in America and in those countries, such as India, which have been the objects of these studies. In the end this recognition can aid the cause of international social science, though, if it leads us to the kind of self-examination and reform that will free us to the greatest extent possible of conscious and hidden biases in research. It is in this context that I think it might be interesting and fruitful to discuss some of the problems that a foreign scholar encounters in planning and carrying out research in India.

Although these problems are stubborn ones, we should not, I think, abandon the search for common approaches and methods in the

social sciences. In fact, one way of more clearly understanding these problems may be to conceive of them in common social science terms. The special problems can be discussed in the framework of four major steps in the research process :

(1) Definition of the research problem — what are the concepts and relationships to be studied ;

(2) Identification and selection of the empirical categories, the kinds of data, that will correspond to and measure these concepts and relationships ;

(3) Selection and construction of the methods and instruments for collecting the relevant data ;

(4) Actual collection of the data in the field.

First of all comes the definition of the research problem, the concepts and relationships to be studied. In this step the foreign scholar confronts difficulties long before he ever leaves his own society. For in conceptualizing and stating the problem he must be sure that the concepts he will study are truly cross-national and cross-cultural, that they are as free as possible from social and cultural biases. That is, he must identify dimensions of social reality that exist, at least theoretically, in all societies, and are not products of a particular social and cultural situation.

For instance, if I as an American scholar plan to study the role of the middle-classes in rural India, I will obviously have a difficult time. The concept of the "middle class" has meaning across the spectrum of American society. I believe one can ask an American farmer whether he considers himself a member of the middle class and expect comprehension and an answer. But can we say the same for the average Indian farmer or rural person ? What does "middle class" mean to a cultivator in rural Thanjavur District ? I would contend that this is not a concept which would be understood by most persons in rural India or would be useful in attempting to describe rural society. Thus, it is not a social category which has universal meaning. A similar problem would be for the Indian scholar to plan to study caste, at least as it has generally been defined in anthropological studies, in American society.

The basic problem, it seems to me, is one of not conceiving the study in broad enough terms. Thus, both the American and Indian scholar might better both plan to study "principles of social hierarchy" or "systems of social stratification," that is, the ways in which individuals and groups are ranked in different social systems. Then a careful attempt to identify aspects of social stratification that are comparable in the two systems must follow.

This brings us to the second problem, the identification and selection of the kinds of data that will measure the concepts and relationships to be studied. What are social phenomena that correspond to the concepts chosen for study? Let us again refer to the concept of social stratification. As we stated above, it may take different forms in different societies. (Some writers maintain that these differences result only from societies being at different stages in what is a universal evolutionary process, and that in all societies certain social forms will eventually emerge under the influence of forces such as "modernisation." This assertion itself may be and has been challenged as being based on ethno-centric assumptions.) What kinds of social phenomena can we use to investigate the commonalities and differences between the systems ?

Suppose that I, as an American scholar, turn to food habits as an indicator of social stratification. Unless I am careful to familiarize myself first with the status implications of food habits in India, I may make many mistakes. Because in America beef is one of the most expensive foods available, it is considered indicative of high socio-economic status to eat lots of it. But, of course, in India because of the ritual importance attached to cattle, beef-eating is generally considered an indicator of low socio-economic status. The same confusion exists in the case of rice or other starches. A diet high in rice or other starches would be considered low status in America and high status in India.

The point is that in identifying and choosing the actual social phenomena that correspond to the concepts I am studying, I must understand the role of that particular social phenomenon *within* the society I am studying. This we may call the problem of establishing the *cross-cultural equivalence* of social phenomena. One solution is what we call "embedding in the cultural context," that is, identifying and

choosing indicators strictly in terms of their meaning within the society being studied. This of course requires quite a deep knowledge of the society being studied.

Let us return again to the concept of status, more narrowly, economic status. What variebles most accurately measure economic status? In the United States we would usually try to find out the monthly income of a family. We can do this quite well because most working people are wage or salary earners, and these are the most common sources of income. But in India where only a small percentage of the population are regular wage or salary earners, what would be the meaning of such data? In fact, some studies have shown that it is better to compare money income in America with some index of material possessions in India.

Even if we take the most common source of income in India, land, we encounter a host of problems in defining land as a measure of economic status. Do we take owned land or operatonal holding? Do we take area operated or value of the produce of the land? How do we treat land owned jointly (in Thanjavur District joint *pattus* are as numerous as single *pattas*)? How, if at all, can we account for the effects of so-called *benami* transfers? Throughout, the relative importance of the household as an economic unit must be kept in mind, in contrast to the importance placed on individual ownership in the West. These numerous difficulties are not necessarily insoluble, but they require careful thought. Yet in many studies they are overlooked.

Another example might be the role of education in determining social status. In the United States the important datum would be whether or not the person has completed the B.A., as the great majority of people complete high school. But in India we would want to ask whether the person has attended school at all. This is to say that we must choose measures that represent the critical sources and ranges of variance in the social phenomena we are studying. Take a very simple example. Suppose we are concerned about how people get information about political affairs. The most important question to ask people in the United States would probably be how often they watch the news on television. Clearly that would be a meaningless way to go about measuring that phenomenon in India. Rather we would want to ask

such questions as how often people discuss politics with others, or perhaps read the newspaper or listen to the radio.

In other words, the most powerful measures of the same phenomenon may be very different in different societies. This sounds, I know, like an obvious and simple observation, but it is, I think, one of the main obstacles a scholar planning and carrying out research in a society other than his own confronts. and one over which many stumble.

Thirdly, the researcher must actually decide about the methods and instruments he will use to collect the data he is seeking. To some extent this may be determined by data sought. For instance, there is little if any published aggregate data about family food habits. But then he would have the choice of whether to study that phenomenon by means of a sample survey or case studies of a few families. These choices must be made carefully, and again, there are special problems for the foreign scholar.

Take the sample survey. It is a method of collecting data for social science now used widely around the world. But it must be borne in mind that it is a method which was developed under certain special conditions and with specific objectives in mind. It began with urban market research in the Western countries, and focused on individual characteristics and attitudes. Is it thus an appropriate method for studying village India, where the corporate group of the joint family or household is the critical social actor, rather than the individual? As mentioned above, the concept of household land holding and house hold economic activity is much more important in India than in whose individual names the land is registered, or by which individual the economic activity is carried out.

The conditions under which the survey tool was developed also raise the question of securing cooperation and accurate information from the respondent. The survey was developed in urban situations where anonymity is common, and therefore being questioned about personal facts and attitudes by a complete stranger was widely accepted. But the distrust and reticence with which most Indian villagers would greet a stranger asking questions is known ; where strangers are few, and those that arrive are usually from Government, it is clearly

reasonable for a villager to fear that " this is a man who wants to raise my taxes." The local way to gain acceptance is to first meet and request at least the tacit approval of the village elders, the Panchayat President, the Village Headman, the Karnam, before carrying on with the research. But, especially if the research involves sensitive matters of village social life and politics, this practice risks prejudicing responses. Furthermore, anyone who is acquainted with the problems of surveying in rural India knows that a greater amount of time must be allocated for building rapport with the respondent than is common in the West. And this of course is a cost that we must take into account when deciding which method to use.

Another problem with surveys is that they are 'self-reported' data — the individual is telling you about himself, and he may not always give you objective data. Suppose we want to know a person's caste. M. N. Srinivas has told us all about the phenomenon of Sanskritization whereby an individual or family raise their own caste status by changing habits and customs. Now we may be interested only in the person's 'present' or 'adopted caste,' but if we suspect that this practice is common in a certain area and want to know his caste at birth, we might do better by asking individuals in the village to give each other's caste. This suggests more of a village case study approach.

Of course, there are also problems associated with the village case study, or what is commonly termed the 'anthropological approach.' First of all, it requires some degree of participant observation; the researcher must be involved enough to be privy to details of village life, but not so involved as to prejudice the way in which the facts are presented to him. This is of course very difficult for a foreign scholar to achieve. It is also a time-consuming process to establish that role, which may not be realized by scholars not very familiar with the situation.

The case study approach also raises the question of representativeness. If the scholar wishes to reach conclusions that may be at least loosely applied to a larger area than that village alone, he must have some basis for choosing a 'typical village." Given the high degree of inter-village variability on many matters in India, the scholar must be very well informed and careful about this. For the foreign scholar this

is all the more difficult as he cannot rely at all on the familiarity that comes from growing up in the society.

Finally, there are many problems in using aggregate data. Most of it is produced by Government agencies, and must, therefore, be suspected of bias. This is true in all societies, but knowledge of the agencies and the processes by which the data are collected and compiled is often scantier for the foreign scholar, and his judgments about the quality of the data thus less reliable. For instance, many kinds of data are produced by agencies that are deeply involved in sensitive social processes. In the case of my own research, the single most important type of data, land structure (distribution of holdings by size and type of tenure) statistics, is produced only by the Revenue Department, and is thus open to questions of accuracy. Even the recent Agricultural Census conducted by the Central Government had to depend ultimately on the Village Karnams for basic data.

Most if not all of these problems face any social scientist engaged in field research, whether he is in his own or another society. The appropriateness and accuracy of the methods and instruments of research must always be considered. But most if not all of these problems are greater for a foreign scholar either because of faulty assumptions and preconceptions or just plain ignorance. Most, I think can be at least partially remedied by careful forethought and greater knowledge and understanding of the society he is studying.

The fourth set of problems are those of actual data collection — the operational problems in the field. Again they are usually problems for all researchers, but may be more acute for a foreign scholar for the reasons mentioned above. These problems are numerous and varied, and many result directly or indirectly from the problems mentioned above. I will discuss a few here that are associated with the survey, the case study and the collection of aggregate data.

The most important task in survey research is the construction of the survey instrument, the questionnaire. The first part of this is deciding which questions to ask. I have discussed above some of the problems in doing this. The second part is the actual writing of the questions and design of the schedule, the 'how-to' of getting as complete and accurate information as possible. One of the first considera-

tions here is how long the questionnaire should be. In the United States it is widely accepted that an interview should ideally last no more than one hour. But this is in a society where 'rush' characterizes all activity. I myself believe that it is possible under good conditions to have an interview in rural India last fruitfully up to two hours. Here is a cultural difference that expands rather than limits the possibilities for collecting information.

Another consideration is the form the questions should take. The closed and pre-coded question is very common in surveys in the United States. Using this form depends very much on being able to foresee most if not all of the answers that repondents will give to a particular question and the terms in which they will answer. I myself believe it is very risky for a foreign scholar doing research in India or any other society to make this assumption unless the question is a very simple one, and I prefer open-ended questions. For instance, a question such as "How often do you read the newspaper" is often pre-coded in the U. S. with a few responses such as "All the time, "Often," "Sometimes," and "Never." These phrases may have a very different meaning to an Indian villager than they do, or we assume they do, to an American city-dweller. "All the time" may be taken to mean every day in the U. S., but only once a week in rural India. Pre-coding often requires assumptions about factors as basic as time dimensions that may not apply to another society. The rule-of-thumb should be: when in doubt, leave the question open-ended.

A common type of question in many attitude surveys is that which asks a respondent to react to a statement and tell the interviewer whether he agrees or disagrees, strongly or not, with it. This can be a very effective type of question, but is also subject to what we call the 'acquiescence effect.' That is, when the respondent is unsure of his reaction to the statement, instead of indicating his uncertainty or no opinion, he will tend to 'acquiesce' in the positive response and say he agrees. Because of cultural practices, it is widely thought that this effect is particularly strong in India, and thus this type of question must be used with great care. This is the kind of thing that a foreign scholar must be aware of in constructing a questionnaire.

A third major problem is that of language. Foreign scholars are, unfortunately, usually not fluent in the language of the country in

which they are conducting research, and therefore have a problem in rendering a questionnaire into the local language. When the researcher is framing the questions, he is of course thinking in the idiom of his own language. Very significant distortions in meaning can occur if the questions are translated literally into the local language without sufficient attention to reproducing the *meaning* of the question. One way of trying to insure against this is to have the questionnaire translated, and then re-translated back into the language in which it was framed. If the meaning of the questions is unchanged after the re-translation, one may feel some assurance that the translation conveys the intended meaning. Thus, for instance, if an American scholar in India wants to know where the respondent and his family are originally from, he might ask the English question, "Where were you born?" But literally translated into most Indian languages, this question would not convey the meaning intended. Rather the question, "What is your native place?" should be asked. In this way, close attention to language may also bring out important cultural differences.

A less important but potentially nettlesome problem in questionnaire construction is the units and categories in which responses are expected. Unless the questionnaire is going to be administered only to very educated persons who think and will answer in either metric or British units, allowance should be made for responses in local units (in Thanjavur District even educated cultivators will describe their land holdings in terms of the *ma*, one-third of an acre, and their agricultural production in terms of the *kalam*, about 28 kgs.). Take the example of a question about a cultivator's agricultural production. Unless the researcher is familiar with the way in which the crop is harvested, he may not get an accurate answer. For instance, a simple question such as "How much paddy did you produce?" in an area such as Thanjavur District is susceptible to several errors. Unless the cultivator is specifically requested to include the share of the harvest paid to labour, he will usually report the production net of it. Similarly, that simple question will also bring an underestimate because the cultivator will usually report the yield from the first threshing only, and there are always two, and sometimes three threshings. All of these are pitfalls to which the foreign scholar is particularly prone.

The next major task in survey research is sample design and selection. Here again the foreign scholar's ignorance may affect his judgment and decisions. For instance, in order to draw up the sampling design the researcher needs certain information, such as the variability of certain factors in the population to be sampled. If he is accustomed to getting such information from public documents, such as the Census, in his own society, and plans a sampling design on that basis, he may have difficulty if that information is not available in the public documents of the society in which he is studying. A similar problem which he may not foresee affects the way in which the sample is selected. Again, survey research and its associated sampling practices, developed in the urban West, assume certain physical characteristics, such as virtually all of the population housed in identifiable structures, that may not apply in a country such as India. New ways of drawing up the sampling frame may need to be devised in areas where much of the population lives on the streets, or where housing may consist of some thatch and tin sheets propped up against a wall illegally on government land and thus moved frequently. Or at least the researcher should be aware that these elements will be excluded from his sample. A related problem is that the researcher may not have at his disposal the population lists that he is accustomed to using in sampling in his own society, or the usefulness of the lists may be less. Electoral rolls may be useful in a society where the great majority of adults are registered voters, but what about where they are not? In my own research I considered using the Karnam's records to draw a sample of cultivators, but as those records are on a field-by-field basis, and also of questionable accuracy in some cases, I am forced to take a complete census of the sample villages selected.

After the preparation of the questionnaire and the sample, the researcher next confronts the problems of actually going into the field. One of these is that of locating suitably qualified interviewers. Again, the foreign scholar must be especially careful. For instance, he must take into account the tremendous gap in countries such as India between the city and the countryside, and the effect it may have on the selection of interviewers In a society as predominantly urban or sub-urban as the United States he would not hesitate to hire urban educated persons to conduct interviews in all areas. But the suitability of an urban-bred and highly-educated person for interviewing in India's rural

areas would be doubtful, especially when, as mentioned above, building rapport with the respondent is such an important part of the interviewing process.

With the questionnaire prepared, the sample drawn and the interviewers selected and trained, the researcher still faces many problems in the contacting and interviewing of respondents. These are relatively small operational problems but can seriously affect the quality of the data. And they are more of an obstacle to the foreign scholar who may not be aware of them. For instance, we have mentioned above the importance of the household as the focus of economic and social activity. This means that usually we want to contact the head of household, that person who is in overall charge of the household's affairs. This is more complicated task in the typical rural Indian joint family than in the typical American nuclear family. And sometimes the duties of the head of the household may be divided between two or more members: the elderly father who is no longer working actively may have final say over household expenditure, while the eldest son may have day-to-day control over routine expenditure and, in agricultural families, cultivation work, and another son may have charge of ritual activities. The researcher has to be prepared for these situations, know what his objectives are, and thereby, which member would be most appropriately interviewed.

Just contacting the appropriate person may be difficult. For example, if one tries to contact adult male members of agricultural families in Thanjavur District during the months of June-July, October-November and January-February, the peak planting and harvest seasons, one will have much difficulty and need to make many time-consuming 'call-backs.' Therefore, the interviewing should be scheduled for the off-season months to the maximum extent possible. A foreign scholar not familiar with such seasonal patterns of economic activity could wind up wasting a lot of research time and funds.

Once the respondent is contacted, there may still be pitfalls in the interview situation that the foreign researcher may not have adequately foreseen. We have discussed above the very serious question of building rapport and gaining the respondent's confidence. I will mention here only two of many other potential problems. One involves what I

call the " crowding around ' phenomenon. Because of the interest that a stranger entering the village creates and the novelty of the research interview to most villagers. the interviewer will often find that many people will crowd around him and the respondent during the interview. At the least this may distract the respondent, and at worst he may alter his responses because of the lack of privacy, or some individuals who are standing around may suggest responses to him. Therefore, some special effort needs to be made to insure the privacy of the interview, or at least screen out the influence of those who are 'crowding around.'

Another problem is how to deal with households consisting only of women (elderly widows) or headed by women. Though these are relatively few, they may be significant (in Thanjavur District many absentee landlords are widows). Because of the role of women in rural India, it will often be very difficult to interview a woman satisfactorily; she will be reluctant to answer many kinds of questions or even to talk to the interviewer at all. Therefore, it may be necessary to exclude females from the sample or make some special provision for interviewing them, such as hiring female interviewers for that purpose.

Because neither of these problems generally arises in the West, an American or European scholar might overlook them, and the data collected would be affected, or time would be wasted in correcting them after starting the research.

Now we turn to a brief discussion of some of the special problems a foreign scholar may encounter in carrying out a village case study. One of the most important is, of course, language. Ideally the researcher should have at least near fluency in the local language; true 'participant observation' would be very difficult without it. If the researcher uses an interpreter, he should make sure that he and the interpreter are of one mind on the objectives and methods of gathering information. He should also be alert to the uses of non-verbal language, the meanings of gestures and body movements. These may be crucial in social interactions that he observes in the village. A well-known simple but classic example of the importance of this is the

confusion that arises in the Westerner's reading of the affirmative side-to-side headshake in India as meaning 'No.'

As mentioned above, the role of participant observer is difficult to establish, especially for a foreigner. First comes the problem of establishing one's credibility as a research scholar. There are various ways to do this: by being introduced by a local governmental agency or official; or by becoming acquainted with a local leader or notable. Both of these may entail risks of biasing the researcher's participant observer status, and those risks must be carefully calculated and weighed. Similarly, once the researcher is installed in the village, he must be sensitive to the way he is perceived by various groups in the village. Most of the scholars who have done village studies in Thanjavur District have lived in village *agraharams* while doing so. Obviously this tacit association with one village group may influence perceptions of the village as a whole. Similarly, the scholar must consider the effect on data collection of his own level of living in the village. Villagers hopeful of favours may report about village life in ways they think the researcher wants to hear. These problems are well known to most researchers, but need constant attention in the field as well as in principle.

Finally, we turn to some of the problems associated with the collection of aggregate data, in particular, official statistics. First and foremost is of course the simple lack of relevant data. The data may be deficient in one or more of several respects. The researcher may not be able to obtain data for earlier years in a time-series study. Many kinds of government records are routinely destroyed after a certain number of years. Or the relevant data may not be available for the geographic or administrative units under study. Recent studies of Indian elections have run smack up against the problem of reconciling socio-economic data from sources such as the Census with voting data by constituency. My own research focuses on the development block-panchayat union as the most important unit for the analysis of changes in rural life. But some of the most important types of data, such as data on land structure and detailed data on cropping patterns and irrigation are available only by taluk because these kinds of data are collected through the traditional revenue system. Data may not

be available also for the analytical categories under study. A well-known example of this comes from the Census itself, where the changes in definition from Census to Census (as in the change in definition of cultivator and agricultural labourer from 1961 to 1971) make it difficult to compare the two. Land structure data is again a relevant example : data on the distribution of holdings by size are not available in terms of acreage, but rather in terms of assessees between Re. 1 and Rs. 5 and so forth. Or data on the distribution of agricultural credit is sometimes stated in terms of distribution to 'big' and 'small' farmers, where the dividing line between the two is set at five acres, a criterion which, I suspect, many agricultural economists would question. Many gaps of this kind can be filled or the data manipulated to serve the analytical purpose. The point is that the research must be designed and carried out with the possibility of these lacunae in mind, or the researcher may spend alot of time barking up the wrong tree. Again the foreign scholar needs to pay special attention to such potential problems.

Another problem of aggregate data collection may by posed by having, in a sense, too much data, that is, two conflicting sets of the same data from different sources. For instance, in the past data on double-cropping was collected by both the Revenue and Agriculture Departments and seldom agreed. Which is more correct ? To make this judgment requires some knowledge of the objectives and processes each source has for collecting the data. This is the kind of 'background' information that can be so crucial for a foreign scholar conducting research.

Finally, there are certain kinds of data, especially from Government sources, that are not available publicly, even to scholars, and perhaps especially to foreign scholars. This is, of course, understandable, and there is nothing to be done about it save being aware of it beforehand so that the research may not get off to a false start.

This brings me to the end of what has been a very incomplete list of some of the problems that may confront scholars conducting research, particularly in the social sciences, outside their own societies. I have not at all attempted to make this an exhaustive list, but rather only suggestive.

In general what I have tried to suggest is that the special problems of foreign scholars can be understood in the context of broad research problems that face all scholars, and that many of the problems of the foreign scholar arise from his own false assumptions and ignorance. Greater communication and collaboration between the foreign scholar and scholars of the society in which he is studying would go a long way towards removing both.

A TRADITIONAL ENTERTAINMENT OF THE NAMBUDIRIS

Dr M. S. GOPALAKRISHNAN

Sastrakali

It is the usual practice among the Nambudiris to hold an entertainment in their *Illams* at the conclusion of every rite of passage that is performed in an *Illam.* The most common entertainment they hold is known as *Sastrakali. Sastrakali* is a traditional entertainment which is performed by a group of people known as *Sastrakalikar* who belong to the Jatimatrakan sub-caste of the Nambudiri community. The Nambudiris take part in this entertainment to get over the tedium caused by participating in the religious rites. This entertainment is held at night.

There are differences of opinion with regard to the origin of *Sastrakali.* One such opinion is that during the reign of a Perumal chief of Kerala the Buddhists were gaining in strength with the support of this chief. So the Nambudiris as Vedic brahmins and as followers of the *Mimamsa* philosophy got agitated in mind. To the despair of the Nambudiris Buddhism spread in all their *gramams.* They were afraid of the Buddhists and sought shelter in the Siva *Ambalam* at Trikkariyur. They prayed to Lord Siva to save them from the Buddhists. One day a sage appeared before the Nambudiris who had assembled inside the *Ambalam* and initiated them in the chanting of a sacred hymn called *Nalupadam.*

According to Raja Raja Varma Raja, a well known Sanskrit scholar of Kerala, six famous *Mimamsakas* (followers of the Mimamsa system of philosophy) led a procession to the palace of the *Perumal* with a view to defeat their opponents, the Buddhists in an intellectual contest. These six philosophers were (1) Bhattacharyan, (2) Bhattabanan, (3) Bhattamayukhan, (4) Bhattagopalan, (5) Bhattavijayan,

and (6) Bhattanarayanan. The Nambudiris defeated the Buddhists in the contest and thereafter the influence of Buddhism in Kerala began to wane. As the singing of the *Nalupadam* enabled them to defeat the Buddhists, this hymn is sung as an invocation to Lord Siva before the *Sastrakali* is begun in an *Illam.*

Some Nambudiris are of the view that *Sastrakali* is a play enacted by a section of the Nambudiris, who at one time were supposed to belong to the local chief's army. This may appear to be partially true, as during this entertainment the actors use weapons of warfare which indicate its origin and association with a group of Nambudiri soldiers called Sastra Nambudiris, who belonged to Jatimatrakan sub-caste of the Nambudiri community.

The Nambudiris who participate in the *Sastrakali* have to be free from all pollution at the time of the play. They wear their clothes in the traditional way. One end of the cloth that they wear below the waist is passed in between the legs, and a knot is made at the end and tucked behind. Another end of the cloth is tucked loosely in the front just below the navel. In Malayalam this way of wearing the cloth is known as *Tattudukkal.* Over this cloth another piece of cloth is tied round the waist. Usually this piece of cloth is that which the Nambudiri generally puts over his shoulders as an upper cloth. A piece of *kusa* grass tied in the form of a ring is put round the fourth finger before they begin the play. Then they offer worship to Lord Siva.

All the religious rites connected with *Sastrakali* are performed before dinner at night. After dinner, at about eight o'clock in the night, the humorous side of the *Sastrakali* entertainment commences. The play is not based on any particular theme, but is a variety entertainment that has many funny elements which cause much laughter among the audience.

After dinner people assemble at the place where *Sastrakali* is to be performed. All people without distinction of caste are allowed to see it. So it is performed in the front courtyard of a Nambudiri *Illam* or in a shed specially erected for this purpose.

Sastrakali consists of: (1) *Chembukotti arpuka* (sounding a brass vessel and announcing the entertainment), (2) *Nalupadam* (recital of a hymn), (3) *Vanjipattu* (boat song), (4) *Vattamırippu* (sitting in a circle), (5) *Pana* (placing a pot), (6) *Ayudha abhyasam* (sword play), (7) *Baliuzhiuka* (removal of the evil spirits) and (8) *Vınodarangam* (variety entertainment). The play begins at night, but certain preliminaries are observed during the day. After the rites connected with a ceremony such as an *Upanayanam* or marriage in the *Illam* are all over, there will be a feast. When all including the servants and dependants of the Illam have taken their food at about four in the evening the actors take a huge bronze vessel and place it in an inverted position on the floor, and sit around it. This is done inside the *Illam,* usually in the *Kizhakkini.* Over the up-turned bottom of the vessel, two big plantain leaves are spread ; then four Nambudiri actors sing hymns in praise of Lord Siva and play the drum on the vessel with their palms rhythmically. After some time, two of the four who are sitting round this vessel stand up and untie their front tufts. These two Nambudiris take ladles made of coconut shell and start moving forward and backward facing each other. The movement is slow. This acting is done in front of a lighted oil lamp near which are placed a plaintain leaf with fruits, a *Para* (a wooden measure) full of paddy, a *Nazhi* (another wooden measure) containing rice. As soon as the Nambudiris assemble for witnessing the play the actors make a peculiar cry *Ooiih* which is called *arpu.* This is done to invite the audience for the entertainment. Only after making this call, they begin singing and sounding the bronze vessel. They invoke Lord Ganapati for the successful conduct of their play. At the end of this rite they take the paddy, rice and fruits kept near the burning lamp. *Chembukotti arpu* is an introductory broadcast to the people living nearby to say that *Sastrakali* would be performed that night in that *Illam.*

All those who assemble at the *Illam* take their tea at about 4-30 p.m. At about 5-30 p.m. the actors proceed to the tank for an oil bath. After their bath they return to the *Illam* and prepare themselves for the play. At about 7 p.m. the actors assemble again before a lamp in which ghee is poured and lighted. With palms joined together as a form of salutation, four Nambudiris from the group of actors go round the lamp singing the sacred verse *Nalupadam.* Then all those who have assembled there go near the lamp and wave their palms over

the flame for a time and then touch their faces with them ; this is an act to indicate that they are taking the blessings of the supreme light.

After *Nalupadam* is sung arrangements are made for a grand feast to be held in the night. The actors occupy the foremost seats in the front row among those who sit for the dinner. Great merriment prevails among the guests during dinner. Cooked rice and a number of sweets are served ; and the actors begin commanding the cooks in very many funny ways to serve them quickly. For example, one member belonging to the group of actors commands the cook to bring him *palpayasam*, (rice boiled in milk to which sugar is added). Another actor repeats this command and then the whole group shouts at the cook in one voice asking him to serve them all at the same time. All delicacies which are served for the dinner are demanded in this humorous way. At the conclusion of the dinner, all proceed to the tank for washing their hands. Then slowly the actors return from the tank singing the *Vanjippatu* which is a boat song. They arrive at the place where the entertainment is to be performed and sit in a circle. This is known as *Vattamirippu* (vattam means a circle), (Irippu means sitting). One after another of the actors stand up and do some gymnastics. These exercises are supposed to represent the actions of the various *bhutas* i.e., spirits attending on Lord Siva. The gymnastics are followed by a few dances by the actors who are dressed in red costumes and who carry wooden shields and swords. Their dances are followed by hymns sung in praise of Lord Siva, Bhagavati and Ayyappan. Another important feature of the play is the act of driving away of all evil spirits from the *Illam*. For this a plantain bole is taken and wicks are stuck to it and lighted. This improvised thing is taken by one of the actors and waved over the burning oil lamp placed in front of the actors. This rite is called *Baliuzhichil.*

The main characters that appear before the audience in *Sastrakali* may now be considered. *Ittikandappan,* the first of these is a Nayar egotist who comes dressed in black clothes ; this character symbolises the ridiculous ways in which egotists generally behave, and the aim of this character is to make fun of all those who talk much about their own achievements and qualities. Another character that appears is *Prakkal* the fisherman who comes dressed in black clothes carrying a fish basket. He carries a stick in one hand and the basket is supposed

to contain fish. As he is a fisherman, his presence creates much laughter among the vegetarian audience. Actually there are no fishes in the basket except cut pieces of plaintain leaves. He takes one after another of these pieces as representing various kinds of fish and tries to explain the quality of each particular type of fish which would benefit those who would care to consume them. This is a witty act of parodying the greatness of the *Mimamsa* philosophy to which the Nambudiris attach much importance. The parody is based on the resemblance of the syllables *Mimamsa* (meen and mamsa) which stand for fish and flesh. Humorous characters depicting the behaviour of a Tamil speaking Pattar brahmin, an old woman and a fool also appear before the audience. These characters portray the pretensions of the immigrants and aliens in Kerala who are ridiculed by the Nambudiris even now. The Nambudiris follow the path of *Karma* (action) more than *Jnana* (the path of wisdom). They say that "Kerala is a Karmabhumi" which means a land where the path of action is valued most.

Conclusion

Sastrakali is not a play based on any single theme or idea. The characters which appear on the stage only answer a few questions which are put to them. There is no relationship between the role of one character and that of another, nor is there any consistency between a question put to an actor and the answer given by him. The humour is based mostly on the different ways in which Malayalam is spoken by the different castes of Kerala. Their peculiar characteristics which ordinarily are a constant source of irritation and tension among them are held up to ridicule and the merriment thus caused enables them to laugh at their own follies and foibles.

There are a few Nambudiris who are interested in preserving this ancient form of entertainment, but there is not much demand for this entertainment nowadays. As the younger generation of Nambudiris have taken to seeing motion pictures and hearing radio broadcast, they no longer show any kind of interest in this entertainment now. In the past, when the *Sastrakalikar* earned their living by this entertainment, the art of playing was taught by the father to the son. At present, as many young *Jatimatrakan* Nambudiris are joining schools and show very little interest in such an entertainment, *Sastrakali* has become rare and may gradually disappear in a few years. In brief,

Sastrakali may be said to be a form of satirical commentary on Kerala society. Here, the Nambudiri, the Pattar and the Nayar form the targets for the actors' satire and ridicule. This entertainment conveys to the people the importance of devotion, the value of satire and the need for a sense of humour in life. Its purpose is to expose the vanity of man and his egotism. To this extent *Sastrakali* is an entertainment that has a sobering effect on the Nambudiris.

OUR POPULATION PROBLEM

Dr C. M. ABRAHAM

Introduction

The critical position that the world is facing in the field of population growth can best be summarised in the following statement :—

> "The present is disturbing
> and the future is terrifying."

Population explosion and its severe consequences are today's concern not only for the developing countries, but also for the developed countries. The affluent countries have their own typical problems arising out of population growth. President Nixon has described the population explosion as "one of the most serious challenges to human destiny." But it is hard to believe that a vast country like U. S. A. with mile upon mile of open land, forests and farms that stretch to the horizon, is experiencing the problem of population explosion. Taken as a whole U. S. A. still has only 58 people per square mile. But about 70% of all Americans have jammed together on to 2% of the land, while half of the nation's counties lost population during the past decade. The crowded American cities are, no doubt, destined to get somewhat more crowded. As a result of the increasing trend towards industrialization and urbanization, the nation does have its overcrowded slums and traffic jams, its squalors of polluted air and water. It is estimated that in the U. S. A. an astonishing 133 million tons of gaseous waste is pumped into the atmosphere every year outweighing its annual steel production. A study of the death occuring in the U. S. A, between 1963 to 1968 revealed that about 10,000 deaths a year would not have occurred at the time they did, if there had been no pollution on the day of the death or on immediately preceeding days. Sulphur Dioxide and smoke created an added stress on the acutely ill and frail people. The stress pushed them over to death's door step. About 1/3rd of the

half-million deaths in the six year period were due to Coronaries. 12% of these coronary deaths were hastened by air pollution. The coronary victims would have stood a good chance of recovery had the air not been polluted. Of all the deaths due to respiratory ailments, 42% were induced by air pollution. 31% of all hypertensive heart disease deaths were caused by air pollution. (The Hindu, July 2, 1971)

The "growing wealth is producing its own problems, of course. The U.S. with less than 6% of the world's people, already devours about 40% of its resources, and some critics blame the rich nations for the worst aspects of the population problem. Americans, for example, throw away more than 10,00,000 cars every year, plus 36 million bottles and 58 million tons of paper. Aside from polluting the land and water, the critics say, this vast consumption threatens to strip the earth of its resources. In the rhetoric of Paul Ehrlich 'American's pride in her growing population may be compared to a cancer patient's pride in his expanding tumour.'[1]

Anyway as far as U. S. A. is concerned food is scarcely a problem at all. "But even if technology succeeds in providing both the food and raw materials to support a large population, some Americans worry about the probability of a basic deterioration in the affluent society that they have come to take for granted. "How will we house the next hundred million Americans?" asks President Nixon. "How will we educate and employ such a large number of people? How will we provide adequate health care when our population reaches 300 million?[2] President Nixon answered these questions by a $ 382 million programme to encourage birth control and by accepting most of the recommendations of the Rockfeller Commission on Population. This is a clear indication of the concern of the most affluenent society on this vexed problem.

In the developing countries, problems arising out of the current population crisis, are multi-dimensional. It is a compound of absolute size, of size relative to cultivable land, of the rate of growth of density and the effect of all these on the rate of economic development. In the case of India, population explosion has serious socio-economic effects. Resources can always be 'created' and it is true that India has vast resources still to be exploited. But the exploitation of these

resources on a scale necessary for higher standard of living is a matter of huge investment and time.[3] With the advent of independence, the expectations of people have also changed and they look forward to a higher living standard within a short span of time and this requires an immediate check on the increasing growth rate of population.

In the words of Robert McNamara, President of the World Bank, population problem is an issue that is so hypersensitive — giving rise to such diverse opinion — that there is an understandable tendency simply to avoid argument, turn one's attention to less complicated matters and hope that the problem will somehow disappear. But the problem will not disappear. What may disappear is the opportunity to find a solution that is rational and humane. If we wait too long that option will be overtaken by events. We cannot afford that. For if there is anything certain about the population explosion, it is that if it is not dealt with reasonably, it will infact explode; explode in suffering, explode in violence, explode in inhumanity.[4] At present, atleast in some quarters, there is a growing feeling that time is running out for man and that he will surely be over run by his own species if measures are not quickly adopted which will drastically deter his willingness and capacity to reproduce. John A. D. Cooper, President of the Association of American Medical Colleges, rightly pointed out that the deepest vein of the population issue is man and his relation to himself, his control of himself and his will to determine the qualitative and quantitative lives of those he creates.[5]

World Population Growth

"The mathematics of the nightmare always makes it sound inevitable: the population of the world, which required centuries to reach 1 billion; took only 80 years to double that number, and only 41 years more to reach today's 3.7 billion. If the progression continues, it is widely and gloomily predicted by the spiritual heirs of Thomas Malthus, there will be 7 billion people standing in line for their rations in the year 2000. By 2050, perhaps, 30 billion will be fighting like animals for a share of the once-green earth."[6] The World Bank President Robert McNamara writes "To project the totals beyond the year 2000 becomes so demanding on the imagination as to make the statistics almost in comprehensible. A child born today, living on into his seventies would know a world of 1500 crores. His grandson would

share the planet with 6000 crores. In six and a half centuries from now...there would be one human being standing on every square foot of land on earth: a fantasy of horror that even the *Inferno* could not match. Such projections are of course unreal. They will not come to pass because events will not permit them to come to pass."[7] Such staggering figures and estimates warn mankind to stem the world's spiralling population. The British Novelist C. P. Snow, warns the world by saying that "We shall, in the rich countries, be surrounded by a sea of famine. Many millions of people are going to starve. We shall see them doing so upon our television sets." Even if some way can be found to feed the onrushing millions, they may still face a psychic fate similar to the one that befell Dr. John Calhoun's white mice. A Psychologist at the National Institute of Mental Health in Washington D. C. Calhoun started with eight mice in an 8½ ft. sq. cage: within a little more than two years, they had multiplied to 2,200, but they were hardly alive — mere "passive blobs of protoplasm, frozen" in a childlike trance.[8] Summing up the sentiments of many population experts, Stanford Biologist Paul Ehrlich concludes that "if we don't do something dramatic about population and environment, and do it immediately, there is just no hope that civilization will persist."

But on the other hand some are of the view that the growing numbers is not much of a problem, but the most important factor is that how we tackle their problems. They estimated that the 'green revolution' can theoretically feed a population 40 times as large as today's. Likewise we can ease the problems of the cities by careful planning and decentralization. Science, technology and nuclear power have just started showing their mastery and mankind is taught that many materials can and should be recycled and re-used instead of simply being thrown away. Besides, although population density is an element in the population problem, it is hardly the only one. "Our life-style must change" says Harvard Population Expert Arthur J. Dyck. "If we stayed at 200 million, would air pollution decrease? Would other problems ease off? No. we have to change our values, our behaviour."

We are thus surrounded by 'Gloomy Prophets' and others who are less gloomy. But taking stock of the realities in the developing

countries, efforts have been afoot to forestall the horror that awaits mankind. They are convinced of the fact that the potential disasters of the rampant population growth will be actually felt by the next generation, if the present trends continue unchecked.

Those who are concerned with the future of mankind in all the nations are seized with this most delicate and difficult problem and they seek the answers to this most profound challenge to the future of all. The Declaration on population significantly made on the Human Rights Day in 1966, recognised the population crisis not only as a focal point of national planning for economic developement and fulfilment expectations of the people, but also as a cause for concern in the quest for a lasting and meaningful peace all the world over. The United Nations family and its specialised agencies together with a number of forward looking governments, International Foundations and leaders of world thought, have now spear-headed the world movement on the subject. The Population Commission of the United Nations Economic and Social Council has recommended the adoption of *1974* as " *World Population Year* " to focus international attention on this most pressing problem and to create a *sense of urgency* in solving this problem among the nations. John D. Rockfeller opines that no problem is more urgently important to the well-being of mankind than the limitation of population growth. It is a world problem demanding the attention of all nations, East and West, large and small, developed and developing. In many parts of the world it obstructs much needed economic growth even as it fosters social unrest and political instability. In a statement before the United Nations Population Commission, the then Director General of the Food and Agricultural Organization Dr. B. R. Sen, described the seriousness of the problems as he sees it from his vantage point. He said " ... it has been recognized that there will be no lasting peace or security in the world until hunger and want can be eliminated. In fact what is in danger is not merely the health and happiness of individuals but the very basis of free and democratic society."

Already many nations have embarked on slowing down the growth rate of their population, some of them being ambitious to reach the Zero growth rate or the eventual stabilization of their numbers. By the beginning of the seventies Japan has already attained this situation

and Britain is nearing the target. The U. S. A. and the countries of Europe are moving in the same direction. Paradoxically, it is the poorer countries of the world which are finding it hard to reduce the population growth.

The third of the world's population that lives in the developed countries — Europe, North America, the USSR, Australia, New Zealand and Japan — has a growth rate which is relatively low, — ranging from Zero to 1.2 % per year. The other two-thirds — Africa, Asia (except Japan) Latin America — has a growth rate ranging from 2% to 3.6% per year. Hence the burden of population growth falls where it can least be accomodated. And the politically dangerous differentials between the have and have-not nations are thus sharpened by the most basic life processes. Robert McNamara points out that "the gap between the rich and the poor nations is no longer merely a gap. It is a chasm. On one side are nations of the West that enjoy per capita income in the Rs. 20,000 range. On the other are nations in Asia and Africa that struggle to survive on per capita incomes of less than Rs. 700. ... What is important to understand is that this is not a static situation. The misery of the underdeveloped world is today a dynamic misery, continuously broadened and deepened by a population growth that is totally unprecedented in history." It is no exaggeration to say that in the most fundamental terms, there are two kinds of countries in the current world: those with a high standard of living and low fertility and those with a low standard of living and high fertility. Technological revolution, which explains the rapid strides made by the advanced countries, has apparently helped the developing countries, especially the Asian and African countries only to reduce their death rate. Even that has not been an unmixed blessing because it has led to the frightening increase in their population. Such growth of population all over the developing nations has neutralized all its achievements in agriculture and industry.

According to the latest United Nations figures, the population of the world is now growing at just over 2% a year. That rate may seem small. The fact is that the world's population has never before grown at such a rate for any extended period of time, and the consequences can be severe. Figures on rate of growth may be more impressive if related to the time needed to double the population :—

Yearly Rate of Growth in percentage	Number of years required to double the population.
0.25	278
0.50	139
1.00	70
1.50	46
2.00	35
2.50	28
3.00	23
3.50	20
4.00	17

Source: Orientation Book of the Institute on Medical Education and Family planning, Washington D. C. 1969.

According to the United Nations Statistical Year Book, 1970, more than half of the world's total population are Asians. The distribution of population as given in the year book is as follows:— (This is for the mid-1969 period)

Asia.	2,009	millions.
Europe.	458	,,
Africa.	335	,,
Latin America.	275	,,
U. S. A.	224	,,
U. S. S. R.	240	,,
Oceania.	19	,,

56.4% of the world's population is in Asia, which however, has only 10% of the world's total income. It is a lot worse that the economic chasm between Asia and the rest of the world is steadily widening, and this brings in disastrous consequences. For instance, children below the age of five, most vulnerable to nutrition, account for more than 15% of the Asian population and about 40% of the deaths in this continent. But this high degree of infant mortality, far from curbing population explosion, intensifies it by providing the motivation for large families.

China with an estimated population of 740 million in mid-1969 remained in the vanguard. (In 1953 the officially announced popula-

tion of China was 583 millions. In an Atlas published in August 1972 in Peking, it is officially announced to have a population of 697,000,000. The index lists population figures in all 30 provinces, autonomous territories and city states including Taiwan. According to atlas, Szechuan with a population of just 68 million remains the most populous province, followed by Shantung with 55.5 and Honan with 50.3 million. Peking has a population of 7.3 million and Shanghai with 10.8 million people. All these figures are very much lower than most foreign estimates).

The Population Situation of India

It took centuries for Indian population to reach the 250 million mark, but it took only 45 years to double the population, (1921. 251.2 millions : 1966, 500 millions) and according to present trends it will take only 28 years to reach the 1 billion mark, i.e. by the close of the present century the Indian population will cross the billion mark. The United Nations Demographic Year Book states that the population of India and China would be equal by 1999 if the present growth rates continue (1.4 per cent for China and 2.5 per cent per annum for India). Some predict that India's growth rate may increase in the coming decade and hence there is a possibility that by 2000 India will have more population than China.

The trend of India's population growth is shown in the following table :—

Total Population of India and the Decennial Growth Rate of Population 1901 — 1971.

Year	Total Population	Decennial Growth Rate
1901	238,337,313	—
1911	252,008,470	+ 5 . 73
1921	251,239,492	— 0 . 30
1931	278,867,480	+ 11 . 00
1941	318,539,060	+ 14 . 23
1951	360,950,365	+ 13 . 31
1961	439,072,582	+ 21 . 64
1971	547,367,976	+ 24 . 66

Source : Census of India 1971. Paper. 1 of 1971 — Supplement. Provisional Population Totals. p. 35.

At the time of the first Census of India (1871) the population was about 214 million. During 1871 — 1921, there was only sporadic growth due to famines and plagues. But from 1921 nowards the situation has changed and there has been rapid and uninterrupted growth in the population and hence 1921 was considered as the GREAT DIVIDE in the history of population growth of India. 1921 — 41 the increase was 67.3 millions; 1941 — 61 the increase was 120.4 millions. 1961 census gave a shock to the planners, and administrators because the 1961 figures exceeded the figures expected by the Planning Commission Expert Committee by 8 million. In 1971 although the all India population has fallen short of the figure expected by the Planning Commission by 12.7 million, the rate of growth has increased compared to that of the previous decade. In the last ten years the population has increased by 108 million i.e. about 11 million per year and the growth rate has increased from 2.16% to 2.46% per annum. This rate of 2.46% may seem small but in absolute numbers it means that India is multiplying at the tune of 11 lakh people every month — and this inspite of the oldest family planning programme in Southern Asia. The present population of India is much more than that of the U.S.A. and the U.S.S.R. put together. (The 1970 census of U.S.S.R. recorded a population of 241 million, while the population of U.S.A. according to their census as on April 1, 1970 was 203 million.) India has only 2.4% of world's land, but 15% of the world's population. One of every 7 persons in the world is an Indian. At the same time our per capita income is only 1.5 per cent of the world total.

India's main problem is that while the death rate has been going down steadily, the birth rate is not showing any appreciable decrease. The following table shows the estimated trend of birth and death rates since 1921 :—

Estimated Birth and Death Rate of India since 1921.

Year	Birth Rate	Death Rate	Rate of Natural Increase
1921	49.2	48.6	0.6
1931	46.4	36.3	10.1
1941	45.2	31.2	14.0
1951	39.9	27.4	12.5
1961	41.7	22.8	18.9
1971	39.0	14.0	25.0

Source : Illustrated Weekly of India, July 23, 1972. p. 11.

The above table shows that upto 1921 the death rate also was equally high. But after 1921 the death rate began to decline from decade to decade. The gap between the birth rate and the death rate began to widen and hence we are having steady and uninterrupted population gowth since 1921. In 1947 the life expectancy of an Indian — Man 33.4 and women 32.6 years — while in 1972 it increased to Man 51.3, woman 52.0. The decrease in death rate and increase in life expectancy are the biggest blessings of the post-independence era, but this very blessings turned out to be curse of the present India.

Religion-wise Population Growth

An analaysis of the 1971 census has shown that the Christians, Sikhs and Muslims — in that order — are growing at a faster rate than the Hindus. The following table gives a broad picture of the religious-wise population figures of the 1971 census.

Religious-Wise Population Figures 1961 — 71

Religious Community	Population	Proportion to total population (Per cent)	Decennial Growth rate 1961 — 71 (Per cent)
1. Hindus.	453,292,086	82.72	23.69
2. Muslims.	61,417,934	11.21	30.85
3. Christians.	14,223,382	2.60	32.60
4. Sikhs.	10,378,797	1.89	32.28
5. Buddhists.	3,812,325	0.70	17.20
6. Jains.	2,604,646	0.47	28.48
7. Others.	2,184,556	0.40	26.10
8. Religion not stated.	36,083	0.01	24.80
Total Population.	547,949,809	100.C0	24.80

The Christians form only 2.60 percent of the population. The state of Kerala, Tamil Nadu and Andhra Pradesh together account for more than 60 per cent of the christian population of the country. The christians have recorded a high growth rate of 32.60 per cent during the decade 1961 — 71. Excepting in Gujarat, Himachal Pradesh Kerala, Punjab, West Bengal, Andaman and Nocobar islands, Delhi, Goa and Pondicherry, the growth rate of christian population has been

higher than that of the respective general population growth rate in the rest of the States. The only states in which Christians constitute more than 50% of the population is Nagaland, in which they form 66.76 per cent. The other States and Union territories in which 20 per cent or more of the population are Christians are Meghalaya 46.98; Goa, Daman and Diu 31.77, Andamans and Nicobar Islands 26.35 Manipur and Kerala. 21.05

Sikhs who form only 1.89 per cent of the total population are concentrated largely in the Punjab which accounts for 78.62 per cent of the Sikh population of the country. Nearly 60.22 per cent of the population of Punjab, 25.45 per cent in Chandigarh, 7.16 per cent of Delhi Union Territory and 6.29 per cent Haryana are made up of Sikhs. In no other state or Union territory do they form over 5 per cent. However, the growth rate recorded by the Sikhs during 1961—71 has been quite high viz. 32 per cent.

The growth rate recorded by Muslims in 1961-71 was 30.85 per cent. Mysore, Tamil Nadu, Kerala and Assam are among the states in which the growth rate of Muslims was higher than the all-India average. In Andhra Pradesh, West Bengal, Pondicherry, Kashmir, Uttar Pradesh and Punjab, however, the growth rate of Muslims has been less than the all-India average.

Buddhists constitute only 0.70 per cent of the total population of the country. Maharashtra accounts for over 85 per cent of the Buddhists.

Jains constitute only 0.47 percent of the population and they are mostly in the Western part of the country viz. Maharashtra, Rajasthan and Gujarat. They are essentially concentrated in urban areas.

The population of scheduled castes and scheduled tribes according to 1971 census was 79,995,896 (14.60 per cent of the total population of the country) and 37,974,953 (5.98 per cent of the total population of the country) respectively.

The following table gives the religious-wise growth rate from 1951 to 1971.

RELIGIOUSWISE GROWTH RATE (1951-1971)

Community	Year	Population (in crores)	Per Cent of Total Popula-tion	Change in proportion Per Cent	Decadal Growth Rate Per Cent	Annual Growth Rate Per Cent
Hindus	1951	30.36	84.98	—	—	—
	1961	36.65	83.50	— 1.74	20.29	1.86
	1971	45.33	82.72	— 0.93	23.69	2.15
Muslims	1951	3.54	9.91	—	—	—
	1961	4.69	10.70	+ 7.97	25.61	2.31
	1971	6.14	11.21	+ 4.77	30.85	2.73
Sikhs	1951	0.62	1.74	—	—	—
	1961	0.78	1.79	+ 2.87	25.13	2.27
	1971	1.09	1.89	+ 5.59	32.28	2.84
Christians	1951	0.84	2.35	—	—	—
	1961	1.07	2.44	+ 3.88	27.38	2.45
	1971	1.42	2.60	+ 6.56	32.60	2.86
Jains	1951	0.16	0.45	—	—	—
	1961	0.20	0.46	+ 2.22	22.17	2.27
	1971	0.26	0.47	+ 2.17	28.48	2.54

Source : S. L. Ogale. Has Family Planning Failed? The Illustrated weekly of India, July 23, 1972 p. 15

GROWTH RATES COMPARED TO PAST TRENDS (Per Cent)

Religion	1901-11	1911-21	1921-31	1931-41	1941-51	1961-71
Hindus	5.72	3.00	9.34	12.75	20.29	23.69
Muslims	6.94	6.70	13.01	18.51	25.61	30.85
Christians	30.98	21.44	25.47	20.75	27.38	32.60
Sikhs	36.63	11.34	33.87	31.27	25.14	32.28

Note : Tribal population was shown as a separate community prior to the 1941 Census and it has been included under Hindu and Christian communities for purposes of calculating Growth of Hindus and Christians.

(i) The figures in the above table indicate that the Muslims, Christians and Sikhs have generally shown a higher growth-rate right from 1901, compared with that of the Hindu community.

(ii) The growth-rates of the Hindu community in the last two decades has shown a significant rise, as compared to rises recorded earlier.

(iii) The other indication is regarding the narrowing of the gap between the growth-rates of Hindus and the minority communities.

Source : S. L. Ogale. Has Family Planning Failed? Illustrated weekly of India, July 23, 1972. P. 17.

The continuous increase in the proportion of the minority population to the total population of the country, has created an apprehension in the minds of some that in a few hundred years Muslims may become the majority in India. And this has led to the formation of a National Anti-Family Planning Action Committee in our country very recently. Winding up the First State Anti-Family Conference in Salem (Tamil Nadu State) on Monday October 2, 1972, Mr. Sudhir Laxman Hendre, President of the National Anti-Family Planning Action Committee said there was immediate need to re-orient the Government's policy regarding family planning in the country. He added that the present programme would only make the Hindus a minority community in the country in the years to come. Sri Sankaracharya of Puri also opposes family planning on similar grounds. He said in Hyderabad on October, 1972 that the Government instead of making efforts to increase food production was taking steps to reduce the population, and this he considered will surely make the Hindus a minority community in India which is the only country for the Hindus.

But I think that such a fear is ill-founded. It is a fact that among the socially and economically backward groups or sections of a group

have a higher growth rate than advanced groups or advanced sections of a group. For instance in the U. S. A. Negroes grow faster than the Whites. This is true of the minority communities also. Once they become literate and advance in their socio-economic life, surely the rate of growth among them will also come down.

State-Wise Population Growth

The States that take the first six places in order of population are Utter Pradesh (88 million), Bihar (56), Maharashtra (50), West Bengal (44), Andhra Pradesh (43) and Madhya Pradesh (41.6 million). While first three states keep up the ranking as in 1961 West Bengal moved up from fifth rank in 1961 to fourth in 1971 at the expense of Andhra Pradesh. Similarly Madhya Pradesh moved up into the sixth place overtaking Tamilnadu. So Tamilnadu now occupies the seventh rank in order of population with a population of 41.1 million.

The outstanding feature of the census of Tamilnadu is that population of Tamilnadu has increased from 33.7 million in 1961 to 41.1 million in 1971, an increase of 22.01 per cent over the decade. To those who expected a fall in the growth rate of population, considering the steady efforts in the field of family planning, this increase in growth from 11.8 to 22.10 per cent must have come as a surprise. The growth of population in Tamilnadu in the last decade was 11.8 percent as against the all-India growth rate of 21.64 and it has now gone upto to 22.01 per cent when the rate for the whole country is 24.57. The state has registered double the rate of growth during the decade 1961—71 compared to that of 1951 – 61. Except Jammu and Kashmir and Nagaland, no other state has registered such an increase compared to the rate of growth of the previous decade.

STATE-WISE POPULATION

The following table shows the population in the States and the Union Territories :—

Rank in 1971	Population in 1971	Percentage to total population	Rank in 1961
Uttar Pradesh	88,299,453	16.14	1
Bihar	56,387,296	10.31	2

Rank in 1971	Population in 1971	Percentage to total population	Rank in 1961
Maharashtra	50,295,081	9.20	3
West Bengal	44,440,095	8.12	5
Andhra Pradesh	43,394,951	7.93	4
Madhya Pradesh	41,449,729	7.58	7
Tamil Nadu	41,103,125	7.51	6
Mysore	29,224,046	5.34	8
Gujarat	26,660,929	4.87	9
Rajasthan	25,714,142	4.70	10
Orissa	21,934,827	4.01	11
Kerala	21,280,397	3.89	12
Assam	14,857,314	2.72	14
Punjab	13,472,972	2.46	13
Haryana	9,971,165	1.82	15
Jammu and Kashmir	4,615,176	0.84	16
Delhi	4,044,338	0.74	18
Himachal Pradsh	3,424,332	0.63	17
Tripura	1,556,822	0.29	19
Manipur	1,069,555	0.20	20
Meghalaya	983,336	0.18	21
Goa, Daman and Diu	857,180	0.16	22
Nagaland	515,561	0.10	23
Pondicherry	471,347	0.09	24
NEFA	444,744	0.08	25
Chandigarh	256,979	0.05	26
Andaman and Nicobar Islands	115,090	0.02	27
Dadra and Nagar Haveli	74,165	0.01	28
Laccadive, Minicoy and Amindivi islands	31,798	0.01	29

—U.N.I.

Source : Times of India April, 13, 1972.

Sex Ratio

India's total population is made up of 283 million males and 263 million females (1971 census). The total number of females is much

smaller than males. While the sex ratio even in the past has invariably been unfavourable to the females, it is distressing to note that it has further dropped from 941 females per 1000 males in 1961 to 932 in 1971.

The following table shows the sex-ratio from 1901 to 1971.

Sex-Ratio (1901 — 1971)

Year	(Females per 1000 Males) Sex-Ratio
1901	972
1911	964
1921	955
1931	950
1941	945
1951	946
1961	941
1971	932

Source: Census Centenary 1972. Pocket Book of Population Statistics. p. 19.

The shortage in the country's female population is sought to be explained as due to higher mortality among women due to the strains of child-bearing and morbidity at reproductive ages and general neglect of female children as well as of adult females.

The only state which shows as excess of females over males is Kerala (1019 females per 1000 males.) While the all-India sex ratio has decreased by 9 per 1000, Tamilnadu has registered a decrease by 13 per 1000. Except Nilgris, Madras and Dharmapuri, all other districts have registered decrease in sex ratio. The highest decrease being in Thanjavur and the lowest in Tirunelveli.

Literacy Rate

India's total population records an overall general literacy rate of 29.35 per cent as against 24.03 per cent recorded in 1961. The literacy rate in the male population in 1971 was 39.49 and in the female

population 18.47 per cent. The corresponding percentage in 1961 were males 34.45 and females 12.95.

Of all the Census figures, those relating to literacy is noteworthy. The Education Commission of 1964 thought with a massive campaign of adult education India might reach a literacy percentage of 60 by 1971. But to our surprise only half of the expected success was achieved by 1971. There are wide disparities between the various states and regions. Kerala leads with 60 per cent, while Tamilnadu comes second with 39.35 per cent. There is large group of states with rates below 30 per cent comprising Assam, Haryana, Orissa, Andhra Pradesh, Uttar Pradesh, Bihar, Rajasthan and Kashmir.

There is no reason to exult over the rise in the literacy rate in the country during the last two decades from a little over 16 percent of the population at about 30 percent today. These latest census do not alter the fact that there are more people in India today who cannot read or write than there were 20 years ago. In 1951 there were about 300 million illiterates, there are now some 350 million of them. What makes it worse is that a fairly large number of those who are included in the literate population because they have been covered by literacy programmes may not be in fact be so. Many relapse into illiteracy soon after leaving school because they have no opportunity to use their newly acquired skills. One of the reasons why the number of illiterates increase despite the rise in the percentage of literacy is, of course, the rate at which the population grows. But the more important reason is the slow progress of the literacy drive. There are about 150 million illiterates out of 230 million people in the age group 11 — 44 who form the country's working force in both industry and agriculture.

The presence of a large majority of illiterates may suit certain vested interest groups, but in the long-run such backwardness of the nation may prove dangerous to competent democracy. The benefits of liberty and independence are not shared by a large section of the people. An illiterate is at the mercy of others. Political, social, economic — industrial and agricultural development — all is vitally linked to literacy. Several of the countries in the West have achieved cent percent literacy in the course of one or two decades by giving top priority to literacy programmes. In India inspite our 25 years of freedom we could not

achieve much. About 180 million adults have to be made literate. Women's literacy is only half that of men's. The oft quoted maxim "Where a man is educated, an individual is educated; where a woman is educated a whole family is educated" has not come into our midst yet. If we have to progress quickly, we have to make determined efforts to improve literacy in our country.

Tamilnadu comes second in literacy rate. The percentage of literacy has risen to 39.4 per cent from that of 31.4 per cent. The rate of increase among males and females is almost equal. While the country as a whole registered a mere 5.32 per cent rise in a decade since 1961, this state has registered an increase of 8 per cent. The total number of literates in this state has gone up from 10,580,616 in 1961 to 16,189,712 in 1971. Next to Madras city the highest percentage of literates to total population is in Kanyakumari district 58 percent of the population being literate. Considering the sex-wise percentage of literates also Kanayakumari district comes second. Not even ¼th of the total population of Salem district are literates. Both among males and females the lowest percentage of literates have been recorded only in Salem district.

GROWTH OF LITERACY

The following statement shows the literacy percentage in States Union territories in 1971 and in 1961.

Ranking In 1971	State/Union Territory	Literacy rate in 1971	Literacy rate in 1961
	India	29.35	24.03
1	Chandigarh	61.24	51.06
2	Kerala	60.16	46.85
3	Delhi	56.65	52.75
4	Goa, Daman and Diu	44.53	30.75
5	Andaman and Nicobar Island	43.48	33.63
6	Laccadive, Minicoy and Amindivi Islands	43.44	23.27

Ranking In 1971	State/Union Territory	Literacy rate in 1971	Literacy rate in 1961
7	Pondicherry	43.36	37.43
8	Tamil Nadu	39.39	31.41
9	Maharashtra	39.06	29.82
10	Gujarat	35.70	30.45
11	Punjab	33.39	26.74
12	West Bengal	33.05	29.28
13	Manipur	32.80	30.42
14	Mysore	31.47	25.40
15	Himachal Pradesh	31.32	21.26
16	Tripura	30.87	20.24
17	Assam	28.74	29.19
18	Meghalaya	28.41	18.47
19	Nagaland	27.33	17.91
20	Haryana	26.69	19.93
21	Orissa	26.12	21.66
22	Andhra Pradesh	24.56	21.19
23	Madhya Pradesh	22.03	17.13
24	Uttar Pradesh	21.64	17.65
25	Bihar	19.97	18.40
26	Rajasthan	18.79	15.21
27	Jammu and Kashmir	18.30	11.03
28	Dadra and Nagar Haveli	14.86	9.48
29	North-East Frontier Agency	9.34	7.13

—UNI.

Source. Times of India, Bombay, - April 13th 1971

Density of Population

If the Union Territories are left out the following are the first six most thickly populated states in the order.

Kerala	548	persons	per sq.	Km.
West Bengal	507	,,	,,	,,
Bihar	324	,,	,,	,,
Tamilnadu	316	,,	,,	,,
Uttar Pradesh	300	,,	,,	,,
Punjab	268	,,	,,	,,

The National average is 182 persons per kilometre.

Among the Union Territories the first three places are taken by Delhi 2,723 per sq. Km. 1 Chandigarh 2,254 and the Laccadive Minicoy and Amindivi Islands 994.

Source. Times of India, April 13, 1972.

POPULATION DENSITY

The following statement shows the population density in different areas:

State/Union Territory	Density of population per sq. km. in 1971	Density of population per sq. km. in 1961
Delhi	2,723	1,792
Chandigarh	2,254	1,052
Laccadive, Minicoy and Amindivi islands	994	831
Pondicherry	982	787
Kerala	548	435
West Bengal	507	394
Bihar	324	208
Tamil Nadu	316	259
Uttar Pradesh	300	250
Punjab	268	221
Haryana	225	172
Goa, Daman and Diu	225	169
Maharashtra	163	129
Andhra Pradesh	157	131
Mysore	152	123
Dadra and Nagar Haveli	151	117
Assam	149	112

State/Union Territory	Density of population per sq. km. in 1917	Density of population per sq. km. in 1961
Tripura	149	107
Orissa	141	113
Gujarat	136	112
MP	93	74
Rajasthan	75	59
Himachal Pradesh	62	51
Manipur	48	35
Meghalaya	44	33
Nagaland	31	22
Andaman and Nicobar islands	14	8

—U.N.I.

Urban Population

The urban population of India rose from 10 percent in 1901 and 17.89 percent in 1961 to 19.87 percent in 1971. The urban population recorded a decennial growth rate of 37.83 percent during 1961-71 against the general population growth rate of 24.66 and the rural population growth rate of 21.78 percent

Now there are 108.8 million people living in our urban centres.

More than half of the country's urban population i.e. 52.41 percent is concentrated in 142 large sized towns having a population of over a lakh. This has been a constant phenomenon in the two decades and the number of these cities classified as class one towns has increased from 81 in 1951 (41.77% of the urban population) to 113 in 1961 (48.37% of the urban population) and 142 in 1971 (52.41% of the urban population). There are 2921 towns of various sizes in the country having 19.87% of the total population.

Of the total urban population 52.48% is literate as against 23.6% of the rural population. Alleppey in Kerala takes the pride of place as the most literate city with 70% of the total population being literate. The first cities in the country in terms of literacy are from Kerala and Tamilnadu.

They are as follows:—

Alleppey.	70.06%
Nagercoil.	69.32%

Trivandrum.	69.38%
Cochin.	69.30%
Quilon.	68.48%
Coimbatore.	65.42%

There are 859 women for every 1000 men in the urban population, as against 952 in the rural population, and 932 in the total population.

The degree of urbanization in India was far below that of some advanced countries such as Britain (78.87 percent), Canada (73.58), U.S.A. (69.86), USSR. (55.85).

Among the states Maharashtra with 31.20 percent shows the highest rate of urbanization. It is closely followed by Tamilnadu (30.28) and Gujarat (21.13).

Of the 25 largest cities in the world, three are in India. Calcutta Urban agglomeration ranks seventh. Bombay 12th and Delhi urban agglomeration twenty-first among the largest cities of the world, according to 1971 census, (New York Urban agglomeration stands first with a population of 11,550,600 and Tokyo Urban Agglomeration second in the list with 11,350,000. But Tokyo city alone has a population of 9,012,000, while New York City has only 7,964,200).

There are eight very large cities in India with a population of 1 million or more. They are as follows :—

Calcutta Urban Agglomeration.	7.01 million.
Greater Bombay-Corporation limit.	5.97 million.
Delhi Urban Agglomeration.	3.63 million.
Madrs-Corporation limit.	2.47 ,,
Hyderabad — U. A.	1.79 ,,
Bangalore — U . A.	1.65 ,,
Ahmedabad.	1.59 ,,
Kanpur. U. A.	1.27 ,,

Population Vis-A-Vis with Economic Conditions

The unprecedented population growth in India takes on its full meaning when we relate it to the resources available for satisfying the basic needs of the people and their cultural aspirations, i.e. when we try to understand the relationship between population growth, development and well being. The imbalance betweeen them creates the

population dilemma and explains the urgent need to take up some prompt and rational decisions to solve the problem rapidly and rationally.

Population growth is not bad in itself, if we could keep the quantity of human life to a limit which will not affect adversely the quality of human life. But our nation is not in a position to maintain the growing population at a rising level of expectations. The fact remains that inspite of our Five Year Plans, we have not even made a dent on the poverty of our masses. Even today a substantial part of our population earns far less than a rupee per day and hence lives in dismal poverty. The teaming millions in our country do not live but merely exist, and that existence too is most wretched. Not only that judged from the modern standards, the living standards of a great majority of Indians are simply revolting, but millions among them cannot afford even a full meal a day. Minister of State for Planning (Mr. Mohan Dharia) revealed in the Rajya Sabha in December 1972 that in India there are more than 220 million people spending less than Rs. 20/- per month. The following table released recently by the Government of India reveals the percentage of people state-wise who come under the poverty line

STATEWISE DISTRIBUTION OF PEOPLE WHO COME UNDER THE POVERTY LINE (1972)

State	Percentage of People under poverty line.
Orissa.	54.7
Nagaland	52.9
Bihar	49.4
Rajasthan.	45.6
Madhya Pradesh.	44.9
Uttar Pradesh.	44.8
Jammu and Kashmir	44.6
Manipur	42.7
Andhra Pradesh.	42.3
Mysore.	41.3
Assam.	40.6
Tamilnadu.	40.4
Kerala.	37.9
Tripura.	36.0
West Bengal	34.9

State	Percentage of People under poverty line
Himachal Pradesh.	34.1
Maharashtra	33.5
Gujarat.	33.3
Haryana.	25 6
Punjab.	20.8

Source: Malayala Manorama Newspaper, Kottayam.

N. B. Rs. 480/- per year per person has been fixed by the Union Planning Ministry in calculating poverty line (Sunday Standard 10—11—1972).

In the United States the poverty line is fixed on the basis of an income of $ 3,700/- per year for an urban family unit of 4. 13.3% of the population is found below the poverty line (U.S. census 1970) (Hindustan Times, Delhi. October 1972)

The above statistics very clearly show that despite significant achievements in the economic field, the economy remains stagnant.

The rapid population growth tends seriously to retard the growth in per capita income. Our national income has gone up by 42 percent but when it comes to the share of individual, that is where the misery lies. This works out to a dismally low figure of less than a rupee per head a day as against the value of the rupee in 1949. The Five Year Plans evaporated into massive efforts to maintain status quo. All the developmental efforts had been nullified by the human avalanche and the planners and the Government were bewildered. There is another side to this picture. Not only that the common man is not at all benefitted by our developmental efforts, but the gulf between the rich and the poor is also increasing in our country. Most reforms in the underdeveloped nations of Asia have increased rather than diminished inequality according to the Swedish Economist Dr. Gunnar Myrdal. He also added that the high yielding grains, merely increase inequality, making the rich entrepreneur richer. (Quoted in the Deccan Herald under the caption Cure Worse than Disease. 16—11—71).

The following standard of living indicators is an eyeopener to the Indian position in relation to other countries.

STANDARD OF LIVING INDICATORS — INTERNATIONAL COMPARISONS

S. No.	Name of the Country	Per capital Annual Income in Rs.	Per capita Daily consumption (grams)				Per capita Daily in take		Per capital Annual Energy @
			Cereals	Sugar	Milk	Fats & Oils	Calorie	Protein (grams)	
1.	India ...	543	346	50	110	9	1810	45	176
2.	Australia ...	13,650	219	144	618	39	3120	92	4791
3.	Brazil ...	1,890	304	111	209	16	2860	71	392
4.	Canada ...	15,653	184	137	646	57	3180	96	8060
5.	Ceylon ...	990	370	50	52	10	2180	50	112
6.	France ...	13,035	235	91	578	65	3,150	102	3093
7.	Germany ...	11,340	194	91	557	70	2,870	80	4,199
8.	Israel ...	8,685	275	108	371	48	2,850	88	2,262
9.	Italy ...	7,650	360	72	418	48	2,860	87	2,129
10.	Japan ...	6,908	394	50	100	19	2,350	78	2,323
11.	Kenya ...	750	350	29	98	4	2,120	64	144
12.	Korea, Rep ...	1,050	556	4	5	1	2,390	70	567
13.	Mexico ...	3,585	353	104	339	28	2,780	74	1,073
14.	Pakistan ...	810	453	60	195	16	2,290	52	92
15.	Philipphines ...	1,748	342	46	40	8	2,000	50	236
16.	Sweden ...	19,988	176	120	745	61	2900	80	4,787
17.	U. A. R. ...	1,245	551	49	122	19	2810	80	267
18.	U. K. ...	11,700	206	136	593	62	3,220	89	5,003
19.	U. S. A. ...	24,773	177	133	665	61	3,200	96	9,828

N. B. Orginal amount in dollars calculated by the Statistical office of the United Nations has been converted into rupees at the rate Rs. 7-50 of a dollar.

Sources: Statistical Outline of India. Tata Economic consultancy services pp. 135 to 136.

Turning to food production, it rose from 55 million tons in 1951 to 94 million tons in 1968–69, but the per capita consumption of food grains decreased from 467 grams per day in 1960-61 to 438 grams per day in 1968-69. In 1970-71, the total food production has gone up to 107.82 million tons. The details are as follows.

FOOD PRODUCTION A COMPARATIVE ANALYSIS FOR 1964–65 & 1970–71

Items	1964-65 in Million Tons	1970-71 in Million Tons	Percentage increase or Decrease	
1. Wheat.	12.26	23.25	Plus.	89.6
2. Rice	39.29	42.45	Plus.	8.0
3. Jowarr.	9.68	8.19	Minus.	15.4
4. Bajra.	4.52	8.00	Plus.	77.0
5. Other Cereals.	11.17	14.35	Plus.	26.5
6. Pulses.	8.56	9.19	Plus.	7.4

Source. Government of India. Economic Survey 1971-72. pp. 88-81.

Even if production potential is assumed to improve, excessive growth of population comes in the way of improving the content and quality of food available for consumption. Instead of the production potential being utilised for producing more nourishing food for a smaller population, it will have to be used mostly to supply the calorie requirements of the essential diet of a large population at the cost of nutritional standards.

The human body has shown to be composed of the following basic constituents. It contains about

17	per cent protein,
13	per cent fat,
1	per cent carbohydrates,
62	per cent water, and
7	per cent minerals.
100	per cent.

Of these constituents only fat and water may vary to any degree : the result of even a slight reduction in the quantities of the remaining

three in the body could be dramatic or even fatal. J. B. S. Haldane and Julian Huxley suggested the following energy requirements in kilo calories per day for different workers each weighing about 65 kilograms.

Energy Requirements for Different categories of Workers.

Profession	Energy need in kilocalories
1. Clerk.	2410
2. Tailor.	2510
3. Cobbler.	2940
4. Metal Worker.	3290
5. Carpenter.	3550
6. Stone Mason.	4660
7. Wood Cutter.	5400
8. Cyclist (who Cycles 16 Hours)	10240

Nutrition experts recommended a diet of atleast 2500 calories a day for an adult. The actual intake of an average Indian is far less — about 1880 (in 1970). The average Indian not only eats less food than the average European or the North American but he eats much more of the wrong sort. In India the starch and sugar content exceeds 80 per cent of the diet. In other countries most of the people take 40 per cent animal products, 35 per cent of cereals, starchy food and sugar and 25 per cent of fruits and vegetables.

Some 200 million people in India subsist on incomes that average less than Rs. 300/- a year. If India depended exclusively on the growth of national income to solve its massive nutrition problems it would require more than 30 years before the poorest third of the country could afford an adequate diet. This is what Robert McNamara, World Bank President said while addressing the Board of Directors of the World Bank in September 1972.

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DICKENS AND CHRISTIANITY

Prof. S. P. APPASAMY

We do not think of Dickens in terms of the ebb and flow of religious faith in the Victorian Age. The image he projects seems so positive and so fixed. While we would not associate him with the revival of religion led by John and Charles Wesley for the common man, or with the great Oxford movement that swayed the University intellectuals, we could not class him with Tennyson who found more faith in honest doubt than in half the creeds, or with Arnold, who lost his faith, never to regain it. The storms between the Church of England and Roman Catholicism brought about when Newman and Gerard Manley Hopkins found peace in the dogmas of the latter; or when Darwin and Huxley ushered in the conflict between the tenets of Science and Religion, seemed to rage outside Dickens's happy ground. Yet Dickens seemed to smile at these contention-tost half-believers in their casual creeds. This was because of his childlike faith in what he believed to be the true message of Christianity. He had not had experiences which shrouded the clear light that he saw, and — in his simplicity — he thought there was none. So G.H. Lewes said with truth: "He still remained completely outside philosophy, science, and the highest literature, and was too unaffected a man to pretend any interest in them."

His beliefs are to be found expressed in the simplest of forms in the "*Life of our Lord*" which he wrote for his children during the years 1846 to 1849. His reason for writing this account are to be found in a letter to John M. Makeham written a day before his death:

> " I have always striven in my writings to express veneration for the life and lessons of our Saviour, because I feel it; and because I rewrote that history for my children — every one of whom knew it from having it repeated to them — long before

they could read, and almost as soon as they could speak. But I have never made proclamation of this from the house-tops."[1]

In another letter to a clergyman he writes:

"There cannot be many men, I believe, who have a more humble veneration for the New Testament, or a more profound conviction of its all-sufficiency than I have......My observation of life induces me to hold in unspeakable dread and horror these unseemly squabbles about 'the letter' which drives 'the spirit' out of hundreds of thousands."[2]

It is noteworthy that his attitude to the New Testament and to Jesus is one of 'veneration'; that he does not believe in proclaiming his faith from the house-tops; and that he believes in the spirit rather than in the letter of the word.

The opening paragraph of the *Life* runs as follows:

"My dear children,

I am very anxious that you should know some-thing about the history of Jesus Christ. For everybody ought to know about Him. No one ever lived who was so good, so kind, so gentle, and so sorry for all people who did wrong, or were in any way ill or miserable, as He was. And as He is now in Heaven, where we hope to go, and all to meet each other after we are dead, and there be happy always together, you never can think what a good place Heaven is, without knowing who He was and what He did."[3]

Dickens's emotions were certainly engaged by the Gospel story, and his comments are often revealing, as can be seen from his version of the curing of Jairus's daughter:

"But of all the people who came to Him, none was so full of grief and distress, as one man who was a ruler or magistrate

1. Charles Dickens, *The Life of Our Lord,* Simon and Schuster, 1934, Foreword p. 4.
2. Ibid, p. 5.
3. Dickens, *The Life of Our Lord,* p. 1 & 2.

over many people, and he wrung his hands and cried, and said, "O, Lord, my daughter — my beautiful, good innocent little girl, is dead. Oh, come to her, come to her, and lay Thy blessed hand upon her, and I know she will revive, and come to life again, and make me and her mother happy. O Lord, we love her so, we love her so! and she is dead!"

Jesus Christ went out with him, and so did his disciples, and went to his house, where the friends and neighbours were crying in the room where the poor dead little girl lay, and where there was soft music playing; as there used to be in those days when people died. Jesus Christ looking on her sorrowfully, said — to comfort her poor parents — 'She is not dead. She is asleep.' Then he commanded the room to be cleared of the people that were in it, and going to the dead child, took her by the hand, and she rose up quite well, as if she had only been asleep. Oh, what a sight it must have been to see her parents clasp her in their arms, and kiss her, and thank God and Jesus Christ, His Son, for such great mercy!

But he was always merciful and tender. And because he did such good, and taught people how to love God and how to hope to go to Heaven after death, he was called our Saviour".[1]

Though it is true that this was written for children, the belief expressed in the last sentence seems to have been Dickens's own. His comment after relating the parable of the labourers who each received an equal wage after having been engaged for varying periods of time, runs as follows:

"Our Saviour meant to teach them by this, that people who have done good all their lives long will go to Heaven after they are dead. But that people who have been wicked, because of their being miserable, or not having parents and friends to take care of them when young, and who are truly sorry for it, however late in their lives, and pray God to forgive them, will be forgiven and will go to Heaven too."[2]

1. Ibid, p. 32-33
2. Dickens, *The Life of Our Lord*, p. 61-62.

Dickens really did seem to think that 'good works' was the open sesame to Heaven, but that God in his mercy allowed others to creep in too, if they cried 'Lord, Lord' in their last moments. We find that Dickens often provided a pious passing even for miserable scoundrels as a passport to Heaven, as in the case of Magwitch in *Great Expectations*, or poor Jo in *Bleak House*; and of course Sidney Carton, Paul Dombey, and the sainted Nell die in the odour of sanctity.

The exhortation at the end of the books is probably the most comprehensive and revealing of his statements:

"Remember :— It is Christianity TO DO GOOD, always — even to those who do evil to us, It is Christianity to love our neighbours as ourself, and to do to all men as we would have them do to us. It is Christianity to be gentle, merciful and forgiving and to keep those qualities quiet in our own hearts, and never make a boast of them, or of our prayers or of our love of God, but always to show that we love Him by humbly trying to do right in everything. If we do this and remember the life and lessons of Our Lord Jesus Christ, and try to act up to them, we may confidently hope that God will forgive us our sins and mistakes, and enable us to live and die in peace."[1]

Another document that throws light on Dickens's creed is the letter he wrote to his youngest son Edward, when he went to Australia to join his elder brother in 1868.

"Never take a mean advantage of any one in any transaction, and never be hard upon people who are in your power. Try to do to others as you would have them do to you, and do not be discouraged if they fail in sometimes obeying the greatest rule laid down by our Saviour than that you should.

"I put a New Testament among your books, for the very same reasons, and with the very same hopes that made me write an easy account of it for you, when you were a little child; because it is the best book that ever was or will be known in the world, and because it teaches you the best lessons by which any human creature who tries to be truthful and faithful to duty can possibly be guided. As your brothers have gone away one by one, I have written to each such words

1. Ibid, p. 124.

as I am now writing to you, and I have entreated them to guide themselves by this book, putting aside the interpretations and inventions of men."

"You will remember that you have never at home been wearied about religious observances or mere formalities. I have always been anxious not to weary my children with such things before they are old enough to form opinions respecting them. You will therefore understand the better that I now most solemnly impress upon you the truth, and beauty of the Christian religion, as it came from Christ himself, and the impossibility of your going if far wrong you humbly but heartily respect it.

"Only one thing more on this head. The more we are in earnest as to feeling it, the less we are disposed to hold forth about it. Never abandon the wholesome practice of saying your own private prayers, night and morning. I have never abandoned it myself, and I know the comfort of it."[1]

Written as this letter was in 1868, to a grown up son, this letter at least is valuable in assessing his attitude to religion. An examination of the tone and phraseology used is I think revealing. His insistence on 'the greatest rule', his commendation of the New Testament as the 'best book' and which teaches the 'best lessons by which any human creature who tries to be truthful and faithful to duty'; his entreaty that he should be guided by the book, 'putting aside the interpretations and inventions of men'; his injunction to 'humbly but heartily respect' the Christian religion; his feeling that religion is not something about which one 'holds forth', and his commendation of prayer because of the 'comfort of it', seem to me to be indications of Dickens's attitude towards religion.

Dickens *was* a Christian, of the Anglican persuasion, though at one period he attended Chapel too. But he was little interested in doctrine or dogma, and thought the religious squabbles of the time disgusting. His own position was, as far as we can see, a simple adherence to the belief in Jesus as the supreme example that we should follow, because he showed us how to do good; and the belief in Heaven which through the mediation of Jesus we would attain if we

1. Wagenknecht, op. cit. p. 151-2.

consciously attempted to do the right, and good, or called upon Jesus to save us if it had been impossible to keep on the straight and narrow way; but were desirous of entering heaven and felt sorry for our sins. All his emphasis was on the idea that 'Christianity is to do good'. No where do we find any ground for a belief that God is a spirit and must be worshipped in spirit and in truth. He seems to have no place for the third person in the Trinity. He seems to have set aside the Pauline Epistles and all that follows the four Gospels as the 'interpretations and inventions of men.' Nor do we find that he worried about original sin, or apostolic succession or other dogmas and doctrines. As Wagenknecht says his religion was 'Christo-centric'. This is partly due to the fact that he was not too well acquainted with the whole of the Bible. Though there are various references to the stories and incidents in the Old Testament, he does not seem to have been familiar with the prophets. He believed that all that they had to say had been superceded by the New Testament. Much has been made of his commendation of prayer — but the terms in which he commends it are far from inspiring. It may have been physical exercise that he was advocating! And the reason that he advances is strange — 'for the comfort of it'. He does not commend it for spiritual blessing or material good as one would expect. It is suggested that Dickens found psychological relief in prayer, from the fact that he sat down and wrote a long prayer at the death of his little daughter Dora. Psychological relief is one of the blessings of prayer, but it is suggested that this was probably the important part of it for Dickens. His adherence to the Gospels and his belief in Jesus were strongly coloured by his emotions. He believed implicitly in all the miracles, and in the presence of angels and other supernatural beings, as we know from the Christmas books. As Foster remarks: "It was the depth of sentiment rather than clearness of faith which kept safe the belief ... against all doubts or question of its sacredness."

If Dickens's Christianity was unorthodox, simple and extremely personal, the effects of his religious sentiments should be visible in his work. There are traces of these effects in various fields, and several of the attitudes he takes up become much more intelligible.

Dickens was not a church-goer. There is no doubt whatever that he did go to church occasionally, but apparently he found the

churches unedifying. While it may be true that he may never have found a church that really inspired him, or a person who did seem to him to be worthy of the calling, it also seems very probable that Dickens had not a clear idea of the function of the church, or of its usefulness in Society. Since it was simple enough to read the Gospels, and thereby derive inspiration and example for 'doing good', he seems to have been indifferent if not antagonistic, to corporate prayer. It is true that his own early experience of church-going does not seem to have made a good impression on him. In the 'City of London Churches' in the *Uncommercial Traveller* he describes an early experience as follows:

> "Time was when I was dragged by the hair of my head to hear too many (preachers). On Summer evenings, when every flower and tree and herb might have better addressed my soft young heart, I have in my day been caught in the palm of a female hand by the crown, have been violently scrubbed from the neck to the roots of the hair as a purification for the temple, and have been carried off highly charged with saponaceous electricity, to be steamed like a potato in the unventilated breath of the powerful Boanerges Boiler and his congregation, until what small mind I had was quite steamed out of me. In which pitiable plight I have been haled out of the place of meeting, at the conclusion of the exercise, and catechised, respecting Boanerges Boiler, his fifthly, his sixthly and his seventhly, until I regarded that reverend person in the light of a most dismal and oppressive charade."

Whether these early experiences filled him with gall against the churches themselves as well as against the services, is a question to be asked, for most of his descriptions of both services and the very buildings, be they church or chapel, are most unsavoury. The only account of an Anglican service appears in *A Sunday under Three Heads*, and is far from flattering. Yet he seems to have had a higher regard for the Anglican ritual, because it was more restrained and impersonal. The extreme familiarity with God which characterised the Chapel seemed to annoy him considerably. This seems in keeping with his idea of private prayers, never to make a boast of them or proclaim them from housetops. It would appear that he was blind to the value of corporate

prayer and worship, since not even once does he mention a service without a sneer. Nor is it surprising that all that he notes in the church is its antiquity and its architecture, which he deals with in a manner scarcely suggesting the humble reverence he advocates for the New Testament. In the *City of London Churches* we find—

> "About twenty people are discernible, waiting to begin. Christening would seem to have faded out of this church long ago for the font has the dust of disuetude thick upon it, and its wooden cover (shaped like an old-fashioned tureen cover) looks as if it wouldn't come off upon requirement. I perceive the altar to be rickety and the commandments damp."

The Church in which Walter Gay and Florence Dombey are married is described thus:

> There is an old brown, panelled, dusty vestry, like a corner cup-board, with the shelves taken out, where the wormy registers diffuse a smell like faded snuff, which has set the tearful Nipper sneezing.
>
> "There are dusty wooden ledges and cornices poked in and out over the altar, and over the screen, and round the gallery. There are dusty old sounding boards over the pulpit, and reading desk, looking like lids to be let down on officiating minister in case of their giving offence. There is every possible provision for the accomodation of dust, except in the church yard where the facilities in that respect are very limited."

If the interiors of the Churches come in for satire, both the exteriors and the interiors of the Chapels are attacked. Allowing that the conditions of the churches in Dickens's day were bad, we yet have other descriptions of them that seem to have been a truer picture of them than those found in Dickens. It would seem that even allowing for the license of the satirist, Dickens had little or no sympathy or understanding for the church and chapel. This all the more surprising when we contrast this frigid feeling toward churches and services with the warmth of emotion which is stirred by any reference to the founder of Christianity.

In an age when the clergyman was in integral part of society, and did play at least the important part of christening, marrying and burying the members of his flock besides his other duties, Dickens neglects the parson. In the vast panorama of his characters there are comparatively, very few clergymen and those that are presented are violently caricatured. If Mrs. Gaskell,. or Trollope, or even the agnostic George Eliot, could present worthy clergymen, and make them the protagonists of their novels, one might be led to look for atleast a reasonable presentation from Dickens. In fact with his humanitarian purpose it would have been simple to have really had a parson hero. But search as we will, there seems to be only two fairly reasonable portraits. The Rev. Frank Milvey and his wife are described thus: "They are representative of hundreds of others, good Christian pairs as conscientious and as useful who merge the smallness of their work in its greatness, and feel no danger of losing dignity when they adapt themselves to incomprehensible humbugs." In other words they are good people like Mr. Cheeryble, or Mr. Jarndyce. Of Minor Canon Septimus Crisparkle he says: He is "cheerful, kind, good natured, social, contented boy-like. He happens to have chosen the church as a profession but it just a good fellow, who breaks the morning ice for a bath in the winter, and knows boxing". No parson is ever presented as being of any spiritual assistance to his flock, or even as being intelligent and influential for good. Against these we have a much more profuse portrayal of really odious preachers, most often belonging to the Chapel. One has merely to mention Mr. Stiggins in *Pickwick*, or the shoemaker who presides over Little Bethel in *The Old Curiosity Shop*, the Rev. Melchisedeck Howler in Dombey, and Mr. Chadband in *Bleak House*, to call up the most disgusting physical and moral characteristics. These are caricatures indeed. Some of them are hardly credible. Most of them do not even have the saving grace of being funny like the rest of Dickens's unsavoury characters. Chapel represented for him not only the faults of the church but the added sin of puritanic hypocrisy, and highly emotional public worship and exhortation. Though Dickens was emotional enough he could not see emotion in the pulpit or at prayer without being revolted. And it would seem that this is the reason for the very harsh portraits that he has drawn. The defence that preachers were always figures of fun in the literature of the time seems inadequate to explain the fact that

these are not figures of fun so much as cruel caricatures. Nor does the voice of moral indignation speak forth as when Milton inveighs against 'blind mouths'. Dickens points out only their hypocrisy and emptiness and intolerance, because that was all he could see. He saw them as hypocrites and humbugs, and nothing more, because he believed that religion was not something to be proclaimed from the housetops, nor diffused with emotion. Any one who fell into such acts became a humbug at once, and Dickens pigeon holes him immediately. In every age and in every sect there will be those who assume a religious character from the worst of motives, but to make them representative of a class, instead of being exceptions in grossly unfair. It is in this profession alone that Dickens does not contrast the good against the bad, for we have good lawyers and teachers to weigh against Squeers and Uriah Heep.

It is this same violent reaction to religious ostentation that accounts in part at least for characters like the sourly religious Mrs. Varden in *Barnaby Rudge*, or Mrs. Clennam in *Little Dorritt* who calls her rigidity religion. These epitomise the kind of religion that Dickens hated. Less violent portraits are seen in Mr. Pecksniff, Martin Chuzzlewit and Mrs. Jellyby in *Bleak House*. Whereas ordinary hypocrisy struck him as funny and humorous, cant and religious hypocrisy inspired him with real annoyance. And again in contrast to these he has no good characters who are also pious — for the simple reason that to him the two did not go together. The only pious characters that strike the mind are Little Nell and Tiny Tim and Paul Dombey, and perhaps the child Lucie Mannette. All these are children, and their piety is touching and pathetic. But John Jarndyce and Mr. Pickwick who is sworn to as an angel, are not of the pious variety. They probably do represent what Dickens thought to be good Christian men, for they went about 'doing good', filled with camaraderie and good humour. That is a characteristic arising from Dickens's conception of religion.

If the above may be termed the aspects of his religious belief which are negative and limited — the blind spots in Dickens — there is a much larger and more praiseworthy positive side as well. For if Dickens did not note the prayer life of Jesus, he certainly did derive great inspiration from His life of service. The impression that Dickens is a good

Christian derives from the fact that he exposed so mercilessly social evils which existed at the time. There is no need to elaborate the point here, for it has been fully dealt with when his services to Social Reform are studied; suffice it to say that his services in the cause of the poor, for Poor Law Reform, in the cause of Educational Reform, and Reform of Orphanages, and the reform of the weighty process of the law were to be seen in his own life time; and Dickens certainly inspired many to both investigate and remedy the ills of the working classes who were living under desperate conditions both of work and lodging in those times. Dickens the humanitarian is the product of his firm and emotional conviction that Christianity is to do good. Even here however, Dickens has his limitations, for his philanthropy is to a great extent negative. He exposes the evil, but fails to suggest the remedy, rubs the sore when he should bring the plaster. In general terms his attitude is — To be good, that is enough. He seems to pin his faith to private and individual goodness. In the final analysis this is perhaps not the ultimate answer, but in times as complicated as the present or even the Victorian age one would expect something more concrete than what he has to offer. We are not convinced that the private benevolence of the good Dickensian heroes will remedy the evils even in Dickens's world, leave alone the world of reality. The kindhearted Pickwickian handing out sovereigns or the pinkcheeked matron benevolently going the grounds of the poor with broth and pies is not our idea of the way to a better world.

In fact what surprises us about Dickens's idea of the world, is that he thinks is as simple as that. In spite of his huge canvases and multitudinous figures the picture that he presents seems naive. For instance he can prescribe benevolence, and yet portray the reaction of such patronage on the part of the poor and proud; he can state the ideal of equality, and will insist that it is an offence to be less polite to a char-woman than to a great lady, but only too often he forgets that it is equally an offence to be less polite to the lady than to the char-woman. He seems to have the poor man's grouse against the wealthy, for when he does portray aristocrats like Lord Mutanhed, Hawk, Verisopht, or Chester he makes them ridiculous and repulsive, yet they are guilty of little worse that mannerisms and eccentricities. Nor does he seem specially interested in transforming them into benevolent heroes. The poor he takes to his heart; their troubles really

move him, their sin and crime he attributes often to their dire conditions; and he firmly believes in the superior moral virtue of the lower classes. His oft-quoted words show that though he thought it harder for the poor to be virtuous, they still achieved more; "I believe that virtue shows quite as well in rags and patches as she does in purple and fine linen...... I believe that she goes barefoot as well as shod. I believe that she dwells oftener in alleys and byways than she does in courts and palaces." He is very sure that virtue does not rest with the pious, for, as we have seen piety if outward he associated with hypocrisy. It is seldom then that the forces of good in the world are reinforced by the religious and pious. Instead the pious are often kill-joys who pollute and darken the well-springs of true happiness.

But the main battle that he outlines is that between the good and the bad. Here too the over simplification is obvious. For in almost every instance the forces of evil are worsted. The Quilps and Murdstones and Defarges and Heeps get the worst of it, die, repent, or at any rate are deprived of their prey. The good always triumph. This seemed to be true in the lives of individuals as well as in the life of the world of Dickens. Except in the case of *Hard Times* and the *Old Curiosity Shop* which are tragedies, it seems as though "there must be an optimistic ending to which the whole fictitious creation moves.', Every sorrow is cancelled out with joy, or failing that, God and heaven are always at hand to provide the just recompence for misery and grief, which in itself is a sidelight on Dickens's view of the world. Almost equally clear is his distinction between the sheep and the goats. There is no depth of psychological analysis in Dickens, no characteristic trait, or tragic fault intertwined with the good which finally cancels and destroys the soul and body. The rogues are rogues pure, simple, and unvarnished; the good men are good, if wine-bibbing and odd eccentricities be allowed. It is this simplicity that accounts for what has been called Dickens's optimism. For the bad men have to be knocked down or converted, and the evil in the world to be overcome with good; and since the good always triumphs the very existence of evil lends an additional, almost a sporting interest to his cheerful, laughing world. Having been so successful himself and so proud of it, it seems as though he prescribes cheerfulness as a duty, a really quite easy duty. As Andre Maurois says, 'Dickens had a real Mark

Tapley strain in him, and he preached the doctrine of being happy as strenuously as did Robert Louis Stevenson."[1]

"The world is a battlefield, where the good are for ever repulsing the wicked, as easy in their minds as warriors entering Valhalla". Besides, Dickens is in no doubt regarding the issue of this struggle; the triumph of virtue is assured, not only in every man's life but more generally in the life of all mankind. For Dickens believes in Progress and that by preaching a gospel of kindness and by abolishing poverty, men will attain a kind of everlasting Christmas, when all good Englishmen will eat plum-pudding for centuries, drinking punch and making goodnatured jokes. There is a Dickensian paradise, as there is a Mahommedan paradise. Pending the Last Trump and the last chapter one's duty is to battle on cheerfully...... what reason have men for living ?...... Because the daily spectacle spread before us is astounding in its gaiety and variety. No doubt this optimism is slightly tempered by the memory of past woes or the sight of present distresses, but even in distress some cheerfulness can always be found. Mankind, in the midst of a hostile universe, should be like Mr. Micawber beset by his creditors yet facing the future with confidence. Mr. Micawber is the ultimate symbol of Dickensian man, and the first words of the Dickensian "message" might run: "Have confidence: be cheerful, the world belongs to those who set out to conquer it with a sure heart and a good humour'. And is this not the result of the simplcity of his character, and the simplicity of his religious faith ?"[2]

1. Maurois, Andre, *Dickens*, John Lane. London, 1934, pp. 159.

2. Ibid. pp. 163-164.

INDIVIDUAL AND GROUP ADMINISTRATION OF PROGRESSIVE MATRICES TEST*

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The Progressive Matrices Test (5) has been used very extensively in India for research and clinical purposes (1, 7). In a few cases it has been administered in group settings by means of epedioscope or in the form of film slides (4). The present study attempts to compare the individual and group administration of the Progressive Matrices Test (Standard form) on a group of adolescent boys.

Procedure :

a. *Sample :* The sample consists of 57 subjects forming the total strength of one section of Standard X in one school (School A) and 55 forming one section of the same standard in another school (School B). The age range was 13 - 17 years (mean 14. 3 years).

b. *General :* The test was given to pupils of School A in individual administration followed by group administration. The order was reversed in School B. There was an interval of fourteen days between individual testing and group testing. Individual testing was completed in the course of one week in each school. The group testing was conducted in a single session in each school.

c. *Individual administration :* Individual testing followed the standard practice as given in the Manual for the test (6). After instruction and demonstration with items 1 and 2 the pupil turned over the pages of the booklet and wrote the numbers of the response chosen in an answer blank working at his own pace. The investigator supervised unobtrusively and recorded the time taken by the pupil for the

*The data were collected by the second author for a M. Ed. dissertation (University of Madras, 1972) under the supervision of the first author.

whole test. The investigator also recorded the behaviour of the pupils in the test situation by classifying it into the following categories.

1. No remarks; 2. Shows keen interest; 3. Distracted; tired; 4. Does not appear to be interested; not motivated.

The classification was based on the total behaviour of the pupil in course of the individual testing.

Group Administration: The group testing was conducted in the semi darkened class room with modified seat arrangement which prevented copying and ensured that all subjects sat at a convenient angle facing the screen. The Matrices items were presented in the form of 35 mm slides projected on to a 2 metre square screen. After instruction with the help of the first two slides, the pupils recorded the serial númber of the alternative chosen in an answer sheet. Following previous investigator who used the projection method for group testing (4) the first 24 slides (sets A & B) were projected for ½ minute each and the remaining slides for one minute each. The total exposure time, thus, was 48 minutes. The class teacher assisted the investigator in group administration in the respective classrooms.

Results

a. *Treatment of data*: The data are analysed in terms of raw scores. Individual testing data in the two schools are combined and similarly the group test data are pooled as there was no difference in the two procedures *viz*, individual testing first or group testing first. There was a small difference between school means but the difference between group and individual administration was in the same direction in both cases (see Table 1).

TABLE 1

Comparison of the first and second administration of the Progressive Matrices Test in Two schools (Mean Score)

	Individual Administration	Group Administration	Gain
School A n = 57	36.92*	41.43**	4.51
School B n = 55	39.50**	43.67*	4.17
Difference	2.62	2.24	

* First testing ** Second testing

b. *The results:* Table 2 shows the statistical constants for the group and individual administration. The scores for pupils in the two occasions are correlated yielding r of ·69.

TABLE 2

Statistical constants for individual and group administration (n = 112)

	Individual Administratino		Group Administration
Maximum	54		52
Minimum	13		24
Mean	38.2		42.5
S.D.	7.50		6.10
t (correlated means)		8.30	
Significance		.01	

The factors that contribute to the higher mean score in group administration are examined below. In the following discussion the score obtained by a pupil in individual administration is treated as the basic score and the difference between this and the score obtained in group administration is referred to as the *gain.* The term is used for convenience, it is not implied that the score in individual administration is necessarily the true or the more reliable score.

c. *Copying:* One possible explanation for higher scores in the group administration is that of copying. The seating arrangement and general supervision were expected to prevent copying. Further it is not logical to assume that copying will always improve the score unless we further assume that the pupil knows which response must be copied from his neighbour.

d. *Ability and gain:* On the basis of the score in individual testing subjects are divided into two equal groups. The gain shown by the upper half is compared with that of the lower half in Table 3. The latter group clearly accounts for most of the gain in group administration. It may be seen that the means of the two sub groups

show larger difference in individual administration than in the group administration.

TABLE 3

Ability and gain in group testing

Ability grouping	Individual Administration Means Score	Group Administration Mean Score	Difference
Upper half N = 56	45.14	45.83	.69
Lower half N = 56	31.25	39.29	8.04
Difference	13.89	6.54	

e. *Time taken and gain* : There have been some previous studies on effect of imposing time limits on scores on the progressive matrices test (2) In the present investigation there was no time limit in the individual administration. In group administration, the slides were exposed for fixed periods as described earlier. Table 4 shows the mean score of pupils in relation to time taken by them in individual testing.

TABLE 4

Means Time, Individual Mean score, Group mean score

Time (in minutes individual testing)	f	Means Score Individual Administration	Group Administration	Gain
15 — 19	1	27.00	43.00	16.00
20 — 24	6	32.00	37.50	5.50
25 — 29	33	37.45	41.03	3.58
30 — 34	33	38.21	43.15	4.94
35 — 39	32	42.39	44.28	1.35
40 — 44	5	41.00	39.40	−1.60
45 — 49	1	52.00	46.00	−6.00
50 — 54	1	52.00	52.00	—

Column 4 in this table shows the mean score of the same pupils in group testing. It can be seen here that generally high gains are recorded by pupils who had taken less time in individual testing. As individual time approaches the time allowed in group administration, namely 48 minutes, the gain vanishes. The number of cases in some of the rows is too small to permit generalisation but the trend suggests that pupils who have hurried in individual administration seem to have benefitted by the slower pace of work in the group. It is interesting to note that coefficient of product moment correlation between time taken and score in individual testing is ·64 (p. less than .01). Thus the pattern of result suggests strongly that one factor leading to gain in the group set up may be due to longer working time in the group.

TABLE 5

Frequency distribution of observation, Mean time, Individual Mean score and Group Mean Score

Observations	f	Mean time (minutes)	Mean Score: Individual Administration	Mean Score: Group Administration	Mean gain
1. No remarks	31	31.96	38.64	41.41	2.77
2. Keen interest	42	33.64	46.47	46.57	0.10
3. Distracted & tired	27	30.92	29.81	38.81	9.00
4. Not interested	12	27.00	26.91	38.58	11.61
Total	112	31.81	38.19	42.53	4.34

f. When we examine the *behaviour ratings* in relation to gain the results assume a different perspective. Table 5 shows the mean time

taken and mean gain recorded by pupils who were rated differently by the investigator on the basis of their overt behaviour. (The ratings had been made without knowledge of either the score or the time that would be eventually taken by the pupil). The group which was rated as 'not serious' (about the task) and 'not interested' has benefitted from group administration to the maximum. The group whose outward behaviour did not attract any particular favourable or unfavourable comment has benefitted marginally.

We must conclude that some pupils rush through the test presumably due to the stressful nature of individual testing. The group set up seems to have facilitated these subjects to work in a more relaxed and productive manner.

Conclusion and Implications

The testee in given unlimited time in individual testing with the Progessive Matrices Test. Nevertheless, some subjects seem to proceed on the assumption that the test must be completed as quickly as possible. They do so at cost of their score. Two suggestions emerge form the present study. Firstly, subject must be encouraged to take much more time and to work slowly; secondly through individual and group testing experiments we must discover the time limit beyond which subjects do not gain substantially. As far as possible, the subject must be made to work at this pace.

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PSYCHOLOGICAL ASPECTS OF LEGAL ABORTION

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Many developed countries in the West and a few developing countries in the East have legalised abortion, with different aims and purposes. Over population is not the important problem in the West. In U.S.A. increasing pressure on legislation for approval of abortion is based on: 1. advances in medical science minimising the risk of operative procedures; 2. the growing emphasis on individual human rights and civil liberties and 3. the desire to control over population. In U.K. when the Abortion Act of 1967 became a law on 7th April 1968 it laid: 1. The continuance of pregnancy would involve risk to the life of the pregnant woman greater than if the pregnancy were terminated; 2. The continuance of the pregnancy would involve risk of injury to the physical or mental health of the pregnant woman greater than if the pregnancy were terminated. 3. The continuance of the pregnancy would involve risk of injury to the physical or mental health of the existing children of the family of the pregnant woman greater than if the pregnancy were terminated. 4. There is substantial risk that if the child were born it would suffer from such physical or mental abnormalities as to be seriously handicapped.

As may be seen in the proposed the abortion laws in the United States of America, population is one of the aims and not the only aim. Similarly in U.K. abortion is permitted for the preservation of the life of the mother only. Therefore it is rightly called 'therapeutic abortion'. It may be noted there is no reference to 'overpopulation', as it is not a problem at all in U.K.

Japan is the only country in the world which set 'Population Control' as its aim when it introduced Abortion as early as 1949. In 1946-50 period Japan had the highest birth rate ever recorded. Within a short period of a decade after the implementation of the

abortion law, it was able to reduce the population to its lowest limit i.e. 17 for 1000. In Tokyo, out of seven pregnancies four ended in legal abortion. The success in Japan encouraged Eastern European countries to introduce abortion law in their countries.

The Term Abortion:

The term abortion means premature termination of the pregnancy usually in the first three months.

In the developed countries like U.S.A., U.K. and in the Scandinavian and Eastern European countries where there is legal abortion, studies made of different kinds of abortion reveal valuable information which may be useful for us in India. Spontaneous abortion is found to occur once in ten pregnancies. Induced abortion outside regular medical channels to be once in four pregnancies. But legal abortion, accounts for only one in hundred. As may be seen even in these countries where law permits abortion, illegal abortion is still very popular. There are many studies, which reveal delicate psychological factors underlying abortion and the popularity of the illegal abortions. They are :

1. To be pregnant and not to want to become a mother is contrary to ethics of the society i.e. pregnancy that is supposed to be a blessing is resented; perceived as misfortune and injustice.

2. Discussion of the problem of terminating pregnancy with somebody reinforces conflict, guilt and shame.

3. In case abortion is sought, the mental condition of conflict, guilt and shame is again repeated, because the woman has at least to discuss the problem with her spouse or other relatives before approaching the consultants. The law in U.K. demands report from two consultants and an obstetrician before termination of pregnancy is undertaken.

4. The innumerable hospital personnel get to know about this and many of them often resent this type of patient and thus further enhancing conflict, guilt and shame in the woman.

5. Unlike other surgical traumata, termination abortion cannot be talked about or discussed freely. This involves suppression and

repression of emotion related to abortion, which in the long run affects the personality of the person.

Problem of Overpopulation:

We in India, are vitally concerned with overpopulation. This problem is one of survival for us, security for our progeny and happiness for the future generation of our country. No national problem could be solved overnight and much less the problem of overpopulation. To us overpopulation really means that there are more people to feed and less food available which condition will be worse by 2000 A.D. After this period it is said that human beings would eat plankton or people. Therefore proper planning backed by scientific thinking becomes important. It is agreed on all quarters family planning generally has not been quite a success. Therefore the only alternatives are either sterilization or abortion.

Psychologists' Views:

Psychologists, Psychonanalysts and Psychiatrists were in fact forerunners of legalising abortion. Sigmund Freud, founder of Psychoanalysis, in early twenties stated: "It would be one of the greatest triumphs of mankind......... to raise the responsible act of procreation to the level of a voluntary and intentional act."

Karl Menninger, one of the leading Psychiatrists and founder of the Menninger Foundation in Kansas in U.S.A. wrote: "The unwanted child becomes the undesirable citizen, the willing cannon fodder for wars of hate and prejudice". He stressed that if a woman is prevented from terminating the pregnancy, which she does not want, the child she brings forth later, becomes target of her aggression. Hippies, the flower children, who are problems in U.S.A. and U.K. and in the Continent include many unwanted children who are consciously or unconsciously rejected by their parents. Probably these countries could have saved these children if they had taken correct steps earlier. Here again, it is a warning to us. Let us not commit the mistakes the people in the West have committed. Let their mistakes be our good lessons.

There have been studies of women who were approved for legal abortions but did not have them for a variety of reasons. In Sweden,

195 women of this variety were studied by Aren and Amark. It was found 21 percent were in a worse emotional state after their delivery. The authors of this study concluded that 11 percent of the total were worse because they were not aborted.

Hook, another Psychiatrist studied 294 women who applied for abortion but were denied. At a follow up 8 to 11 years later, 24 percent of the group who were denied legal abortion showed continued significant emotional reactions and 53 percent although led an apparently normal lives, were living their lives with brakes on. They manifested neurotic sexual reactions; pronounced neurotic reactions directed against the child or considerable social difficulties connected with the care or placement of the child. The rest 31 percent manifested difficulties in human relations at home and outside. These two studies, cited as examples show how abortion would have helped the women to live healthy life emotionally.

There are again research evidences to show that if a woman strongly wishes abortion there is little reason to fear that she will suffer Psychiatric disorder. The range of emotional maladjustment following legal abortion range from 0 to 2 percent only and these are cases manifesting transient depressive reactions. Studies in U.S.A. and in Scandinavian countries confirmed this finding. Ekbald's survey of 400 women in Sweden who were legally aborted revealed 75 percent to be free of guilt or depression 3 to 10 years after abortion. Again, if the women who strongly wishes abortion, for reasons of morality and is prevented, she chooses many alternatives including suicide. If she survives these and gets the child after a full term, the child remains unwanted, grows in an unhealthy way, and the chances of this child ultimately becoming a neurotic or a delinquent are great.

Abortion and Mental discrders

There are research studies of cases of legal abortion which has precipitated mental disorders in them.

E. E. Kenyon, a Psychiatrist attached to Oxford University studied 65 cases for Psychiatric opinion in connection with termination of pregnancy, during the first one year of the Abortion Act in U.K. Amongst these 65 cases, *depression* formed 52 percent *anxiety state*

9 percent *psychopathic* personality 5 percent and *subnormal intelligence* 5 percent. Those champions of antiabortion quote this and other studies of this type as examples. However a thorough study of these cases, by Kenyon it was found that each patient had unhappy childhood; unhappy relationship with parents; broken home conditions; premenstral tension, significant number had dysmenhorrea and menorrhagia. As may be seen, the unhealthy social background was responsible for their breakdown. The act of abortion was only an excitatory factor. In all these cases, if not abortion any other traumatic incident would have produced same condition in the patients.

Conclusion

With advancement of medical science, abortion is safe. For example in Eastern Europe where abortions are granted upon request the mortality rate from legal abortion is 1 to 6 in 10,00,000 cases a rate lower than the 24 out 1,000,000 for live deliveries in U.S.A.

Even if law supporting abortion, is brought in, one cannot be satisfied that the population problem wiil be solved. It cannot be taken for granted that the women would voluntarily come forward to make use of the law to control the number of children. Illegal abortion will be still popular because of its advantages, as against legal abortion because of the delicate Psychological factors mentioned earlier.

There is bound to be a lot of resistance from all sections of society including the women to whom the benefit is intended. Here careful preparation of the people to accept the idea is important. Unfortunately this aspect has been neglected and we have instance of family planning which is by and large a failure at least in the case of people to whom it was meant. The abortion law may face worse results than the family planning measures. With their training in the techniques of propaganda, Psychologists will be of great help in the popularising the idea.

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1. Ekbald, M. (1950) : Induced abortion on Psychiatric grounds. A follow up study of 479 women, Acta. Psychiatry and Neurology, Scandinavia 30 (Supplement) 99

2. Fleck, S. (1970) : 'Some Psychiatric aspects of abortion,' Journal of Nervous and Mental disease *151*, 42-50

3. Howell, N. (1969) : The search for an abortionist. The University of Chicago Press.

4. Freud, S. (1930) : *Civilization and its discontents,* London. Hogarth Press.

5. Hook, K. (1963) : ' Refused abortion : A follow up study of 249 whose applications were refused by National Board of Health ln Sweden', Acta Psychiatry and Neurology 39 (September) 168

6. Kenyon F. E. (1969) : 'Psychiatric referrals since abortion Act 1967' British Journal of Medical Psychology *45.* 718-721.

7. Kenyon, F. E. (1969) : 'Termination of pregnancy on Psychiatric grounds a comparative study of sixty one cases', British Journal of Medical Psychology, *42,* Part B

8. Levene H. I. and, (1970) F. J. Rigner : ' Law Psychiatry and therapeutic abortion.' Journal of Nervous and mental disease, *151*, 54-59.

9. Menninger K. (1940) : Psychoanalytic Psychiatry-theory and practice-Bulletin of Menninger Clinic *4*, 105-123.

or the doctrine of linguistic relativity is to have any plausibility, it must be re-formulated as a theory about the relationship between language and commonsense.

Cross-cultural comparisons immediately suggest themselves to us when we set about examining the hypothesis of linguistic relativity. But even if we find, on the basis of such comparisons, that wherever there is a significant linguistic difference, there is also a differencc in style of thought, it does not follow, as Max Black [4] has pointed out, that the one has caused or conditioned or influenced the other, since so many other co-varying factors may also be pertinint. Ideally, we should have only a single factor of variability-language. Moreover, before cross-cultural comparisons can be interpreted at all, we must be reasonably sure as to what we mean when we say that language embodies or causes a philosophical point of view.

In other words, the problem must be specified in greater detail:

1. Does language affect perception?
2. Do the grammatical categories isolated by linguists affect the categories or concepts by means which we understand the world?

Language and Perception:

The commonsense view on this matter is that, for example, when seeing a tree, I say, 'I see a tree', the linguistic utterance succeeds the perception, and so could not have caused it. But after all, the perceiver can speak about what he perceives only because he possesses a group of linguistic habits, a set of dispositions to use certain expressions under certain conditions. Since the items in our environment are much more numerous that those that have been registered in the actual act of perceiving, we may infer that a certain selectivity has been at work in perception and our linguistic dispositions have influenced or controlled this selectivity. One of the reasons why we have registered certain details and neglected others is that we have words for some of them and none or only very clumsy and complicated ones, for the others. We might think of language as a perceptual screen, which permits us to respond to some items and inhibits our responses to others. Thus, F. G.

4. Black, Max "Linguistic 'Relativity' Models and Metaphors.

are called 'highly codeable'. An experiment 'to determine whether English speakers do better when they have to recognise colours which are highly codeable in their language than when they have to recognise less codeable colours leads to an affirmative conclusion; 'statistically, codeable colours are recognised significantly more often than less codeable colours and thus there seems to be some evidence that a particular linguistic factor-codeability-affects a cognitive process-identification.

But we must also observe that in this process of influencing the perceptual process, language is a mediating, rather than a primary factor. This has been argued out by Jerome S. Brunner.[10] Brunner defines the accessibility of a concept or a category as the ease or speed with which some experienced item is identified or recognised by its means. Now, the vocabulary of a language embodies highly accessible categories because of two conditions, In the first place, 'the accessibility of categories reflects the learned probabilities of occurrence of events in the person's world. In short, a language possesses words for those objects which are most frequently encountered. *In the second place*, 'the aceessibility of categories also reflects the search requirements imposed by my needs, my ongoing activities, my defenses, etc.'[11] In general language possesses words for those objects which are most frequently sought for or desired or used.

It would seem, in the light of Brunner's discussion, that the Sapir-Whorf's claim that 'we see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation' is beside the point; for these predispositions themeselves are the results of, and maintained by, the habits which our environment and our biological needs force upon us. Recently, Paul Henle,[12] has argued that if the thesis of linguistic relativity is true, then 'the world appears differently to a person using one vocabulary from what it would to a person using another.' But the view that language influences perception may be taken in two senses, as Henle himself points out:

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10. Brown, R. Language and Categories, p. 291.
11. Mill, J. S. System of Logic.
12. Henle, P. Language, thought and Culture.

(1) Vocabulary influences perceptual recognition and identification.

This view is compatible with that thesis that all perceivers live in 'the same world', i.e. that they accept a common frame work of categorical classification, in Hall's[13] terms.

(2) Learning a language constitutes or causes the acceptance of a framework of categories so that learning a language imposes different frameworks. This means that learning a language leads to an acceptance of a metaphysical or philosophical point view which influences, not only which entities we perceive, but also the categorical features under which we perceive them. In terms of Carnap's distinction, the first would be an internal thesis, while the second would be an external thesis.

Whorf, in some passages, seems to favour this second interpretation. He writes, 'The categories and types we isolate from the world of phenomena, we do not find them there because they stare every observer in the face. On the contrary, the world is presented in a kaleidoscopic flux which has to be organized by our minds ... and this means, largely by the linguistic system in our minds. We cut nature up organize it into concepts and ascribe significance as we do largely because we are parties to an agreement that holds throughout our speech-community and is codified in the patterns of our language."[14]

Similarly, Urban writes, 'anythig that can become more than a diffused awareness, has language as a constitutive element — pure experience is a pure myth. Without language and its categories, there is no experience in any intelligible sense. We may conceivably have sense-data without language, but mere 'having' is not knowledge. It is meaning that turns sense into things or objects and wherever there is meaning, there language enters as a constitutive element."[15] Cassirer also finds the linguistic process of naming to be of primary significance, for it 'transforms the world of sense impressions into a mental world,' a world of ideas and meanings'. He argues that we attain or realise

13. Hall, E. W. Philosophical Systems.

14. Whorf, B. Language, Thought and Reality.

15. Cassirer, E. Philosophy of Symbolic Forms Vol. 1, p. 280.

definite properties and objects only by means of language, through the very act of naming and that before we know tbe name there are no things and properties but only a 'raphsody of impressions' 'an ever flowing stream of perceptions', 'a Heracleitan river of change.'[16]

Linguistic idealism as represented by Whorf, Urban and Cassirer presents itself as a theory, not merely of the genesis of our concepts of objects but also of the existence and differentiation of the objects themselves. But against this, Gestalt psychology claims that the meaning of our experience acquires, follows the lines drawn by natural organization. Whether or not one agrees with Kohler that 'sensory organization constitutes a charactristic achievement of the nervous system,'[17] the evidence seems to point to the fact that some fundamental organization precedes language learning. Thus, Frankling remarks: 'He (Whorf) says that primordially the experience of an individual is a blooming confusion. That, I think, is unusual and untrue. I do not think that the experience of an organism at any stage is a blooming confusion. There is always a figure-ground differentiation — Whorf's discussion is wholly on the assumption that, apparently, there is no such pre-linguistic stage.'[18]

Koffka also has argued that the behaviour of the child during the pre-lingual period confirms the hypothesis that 'thinking must have been present in the form of firm and realtively fixed configurations, quite early in the development".[19]

Lingistic idealists have argued that distinctions and classifications are not given but imposed by us upon experience, while being guided by linguistic clues. However, Roger Brown[20] has shown experimentally that experienced distinctions among items of experience serve as guides to the discovery of linguistic distinctions, rather than the other way about. This conflicts with some basic presuppositions of

16. Urban W. M. "Whitehead's Philosophy of Language" The Philosophy of A. N. Whitehead, p. 309-313.

17. Kohler. W. Gestalt Psychology, p. 82.

18. Fearing, F. Language in Culture, p. 180.

19. Koffka, The Growth of the Mind, p. 342.

20. Brown, R. Language and Categories, p. 291.

some philosophers. Thus Mill[21] believed that grammar was a part of logic and that grammatical distinctions reflect conceptual ones. Further, this has been made into a critique of traditional philosophy and metaphysics. Thus, Manfred Sandeman writes, "It is more than probable that certain basic features of Aristotle's logic were suggested to him by grammatical considerations and it is doubtful whether the 'substance accident' relation would have been given the place of honour in logical theory by a philosopher speaking a language for which the contrast between the noun and the verb was less significant than in Greek."[22] Similarly, Waismann writes, 'Existing language, by offering us only certain stereotyped moulds of expression create habits of thoughts which it is almost impossible to break. Such a mould is the actor-action schema of the Indo-European languages. How deep their influence is can perhaps be surmised from Descartes' conclusion from thinking to the presence of an agent, an ego different from the thinking, that does the thinking — a conclusion so natural and convincing to us, because it is supported by the whole weight of our language.".[23]

But, as Morris Lazerowitz[24] has pointed out, we must be careful here in not attributing a greater causal efficacy or influence to a feature of language as such rather than to certain theories or conceptions about language that philosophers have held. In Descartes' case, it is the theory held by him that all sentences have a subject predicate structure that seems to have influenced his philosophical standpoint.

Furthermore, as Greenberg points out, speech consists of sentences uttered by members of a speech-communinty, but language, in so far as it is the concern of the linguists, consists not of definite sentences, but of grammatical rules and those elementary meaning units (words, prefixes, sufixes) from which sentences may be constructed according to rules. (Sapir would even eliminate the meaning-units and identify language with its grammar or form). Now, precisely which sentences will be uttered is a function, not only of the language,

21. Mill, J. S. System of Logic.

22. Sandeman, M., Subject and Predicate, p. 13-14.

23. Waismann, F., 'How I see Philosophy' Logical Positivism, p. 362.

24. Lazerowitz, M., The Structure of Metaphysics.

but also of the speaker and the situation. In the light of this, the Sapir Whorf hypothesis needs to be re-examined. In ordinary use, the term 'metaphysical' refers to a set of beliefs which take sentential form. But language only gives us the meanings of elementary units, together with the rules of construction of making sentences from them. From the finite set of elements and rules it is impossible to predict which of an infinitude of sentences which are possible will actually be used by the members of the speech community. It is not eassy to see, therefore, how we can infer any such formulation of belief. If metaphysics can be said to be embodied in language in any meaningful way, it must be embodied in the meanings of elementary units, i.e. in the terms of concepts expressed by words, rather than in propositions expressed by sentences.

Something like this, we have in Austin who holds that 'our common stock of words embodies all the distinctions men have found worth drawing and the connections they have found worth making in the lifetimes of many generations".[25]

But such a thesis must be handled with care. In the first place, the philosophical point of view is contained, not so much in language, considered as a set of sounds together with rules for combining these sounds, as in the system of necessary concepts which we express when we use language. Furthermore, these necessary concepts have to be identified by the uses to which the words that express them are put. It is by a philosophical study of speech, of the performance of language that we can identify and locate the concepts and the criteria which are constitutive of them. And this means that one must start from the phenomena of use, rather than from grammatical and syntactical classifications and distinctions. And to study these uses is to study them against the background, and in the light, of the forms of life to which they give expression. Rather than the classifications of grammar and syntax being our clues to the forms of life, it is these forms of life that are our clues to the interpretation of the nature of language, for 'to imagine a language is to imagine a form of life.'[26]

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25. Austin, J. L., A plea for excuses, Proceedings of the Aristotelian Society, 1956-57, p. 8.

26. Wittgenstein, L., Philosophical Investigations, See. 67.

RECENT DEVELOPMENTS IN ECONOMIC THEORY — WELFARE ECONOMICS*

Dr V. SHANMUGASUNDARAM

Section I: Foundations

The earlier Surveys by K. E. Boulding[1] and E. J. Mishan[2] have covered the major developments in the theory of welfare economics upto the year 1959. The purpose of the present work is to bring the study upto date. The period covered by the study is between 1960 and 1970. Though the analysis review of literature during the last one decade is given hereunder according to the technique followed by K. J. Arrow and T. Scitovsky in their *Readings in Welfare Economics* for the American Economic Association (Allen & Unwin London 1969) the present survey is largely based on articles not found in the AEA Series except a few.

In the period under survey there is less contribution than the earlier periods the main reason being more attention is given to applied branches of welfare economics like economics of human resources and economics of education. Both these are not included under the present study and only the additions to the knowledge of the main core of welfare economics is made note of.

Authors devoting themselves entirely to the discussion of welfare economics have been very few.[3] There is no consistent effort to

1. Boulding K. E.: Welfare Economics in Survey of Contemporary Economics Vol. II Ed. B. F. Haley (AEA 1952)

2. Mishan E. J.: Survey of Welfare Economics, Economic Journal, 1959.

3. (1) Majumdar T.: Measurement of Utility, London, 1958
   (2) Rothenberg J. F.: The Measurement of Social Welfare, 1961 (Prentice Hall Ltd.)

** Paper presented at the Second Workshop on Economics Research Methodology held at Andhra University, Waltair, organised by the Madras Institute of Development Studies and Indian Council of Social Science Research (1972)

develop a full-fledged theoretical framework of welfare economics. From the beginning, welfare economics has not attracted a faithful band of scholars. A few dabble at it now and then and desert the subject with rare exceptions. This accounts for the many missig links in the smooth development of the science of welfare economics.

The major impact on the theoretical study of welfare economics was made by Tapas Majumdar with his undersized volume — Measurement of Utility.

To the great expectations of Pigou, the "economic man", the pivot around whom the science of economics revolves, does not hold up. The two important attitudes of this economic man are that he is not affected by what is happening to others and that the end of economic activitiy is solely in terms of marketable output. Pigou allows the external economies, the negation of the first attributer but clings to the existence of only marketable output. In this sense Pigouvian Welfare Economic fails to "tear itself away completely from the notion of Economic Man".[4]

Three basic objections are raised by Majumdar condemning Pigou's definition. Firstly with regard to describing satisfaction as "a thing which can be brought under the category of greater or less."[5] This is rather "premature if not misleading".[6] The kind of enjoyments from the different commodities are not just comparable according to Majumdar. But in view of the elaborate devices that the critics have worked out, unless some such qualifying assumption is made there is no possiblity of building up a theory at all. Pigou's assumption supplemented by Marshall's consumer's surplus principle can be taken as a safe premise to go further ahead.

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(3) Sturney S. G. : Income and Economic Welfare, London, 1959

(4) Titmus G. R. : Commitment to welfare, London, 1968

(5) Scitovsky T. : Papers on Welfare and Growth, London, 1964

(6) Morgan J. N. : Income and Welfare in U. S. (McGraw Hill), 1962

4. Majumdar T.: Measurement of Utility, London, Macmillan & Co. Ltd., 1958, pp. 4.

5. Ibid. p. 6.

6. Ibid. p. 6.

Secondly treating of streams of real aggregate income as indications of the positive elements of economie welfare is objected to since Pigou assumed away the problem of distribution of that income. The careful perusal of the later chapters of Pigou on redistribution clearly reveals that Pigou did make special note of this particular situation.

Thirdly, the objection is with regard to narrowly identifying the pursuit of welfare economics solely in terms of consumption and production of National Income. It is complained that Pigou's identification of economic activity with productive activity has led to this narrow conception. This objection is not altogether a separate one. It is rather implicit in the second objection. Economic activity may comprehend production, consumption and distribution, three distinct activities but they do not pertain to three different magnitudes, that is produced, distributed and consumed in the entire process further leading to redistribution. Hence the third objection of Majumdar cannot be taken as a main objection against Pigou.

Mishan summarizes[7] the earlier theoretical framework of welfare economics as falling under two main approaches viz. the allocation approach and the piecemeal approach (roughly approximate to the maximum satisfaction and the case-by-case approach.) The general allocation approach is directed at a *best* position for the community and the comparative and piecemeal analysis is concerned with the task of ascertaining a *better* position for society. Both are complementary for "in moving from one better position to another we are in effect moving closer to a best position."[8]

The allocation approach in welfare economics has evolved a good number of allocation rules (MSNP & MPNP of Pigou, the optimality rules of Pareto and the maximisation conditions of Lerner) to identify the optimum position. There is already a long tradition of distinguishing private and social benefit or private and social cost. But the piecemeal approach in contrast to this has been absorbed in the "intricacies arising from different notions of hypothetical compensation[9] that they have overlooked the former aspect. However, the

7. Mishan, E. J.: Welfare Criteria for External Effects *AER* 1961, pp. 594.

8. Ibid : p. 594

9. Mishan, E. J.: Welfare Criteria for External Effects, *AER* 1961, pp. 594-595

general allocation analysis does not hold out much hope in solving the problem of welfare. Comparatively the piecemeal analysis holds out more prospects since arbitrating between two economic situations with some small change is not "*outside the bounds of possibility*".[10]

In its various forms externality dominates the theoretical welfare economics[11] and the theory of economic policy generally. But rigorous definition of the concept itself is not readily available.[12] James Buchanan and Wm. Craig Stubblebine[13] clarify the notion of externality by their rigorous and precise definition and distinguish between marginal and infra marginal externalities, potentially relevant and irrelevant externalities and Pareto relevant, and Pareto irrelevant externalities. They deliberately choose to discuss only a single externality since much of the confusion in the literature seems to have arisen because of the simultaneous handling of two or more externalities.

This defect is made good by a treatment of dual externality problem by Otto Davis and Andrew Whinston[14] utilising the tools of games theory for inseperable cases. *Mishan observes*: "*For all that, welfare* economics can no more reach conclusions applicable to the real world without some knowledge of the real world than can positive economics".[15]

Despite public and Governmental concern over pollution and such environmental problems there has been a tendency in economic literatures to view externalities as exceptional cases.[16] But at least one

10. Ibid : p. 596
11. Levelle M. J. : Welfare Economics and the logic of external effects, Review of Social Economy, September, 1963, pp. 131-48
12. Scitovsky. Two concepts of External Economics, JPE, 1954, pp. 143
13. Buchanan J. M. and Stubblebire Wm. Craig. Externality, Economica, November, 1962, pp. 371-84
14. Otto Davis and Andrew Whinston "Externalities, Welfare and the theory of Games" June *JPE* 1962, pp. 241-62 (also see)

    Becker G. S., Independent Preferences, Charity Externalities Incomes, and Taxation (unpublished MSS) March, 1968.
15. Reflections on Recent developments in the Concept of External Effects, Canadian Journal of Economics and Political Science pp. 1-34
16. A. C. Pigou — *Economics of Welfare* and Scitovsky (Two Concepts of External Economics *JPE* April, 1954, 143-51).

class of externalities — disposal of residue from consumption and production must be viewed differently since they are a normal and indeed inevitable part of those processes. Their economic significance increases as economic development proceeds. The common failure to recognise these facts may result from viewing the production and consumption process in a manner that is somewhat at variance with the fundamental law of conservation of mass.[17]

A sort of mixed approach is evident from the works of I.M.D. Little, F. M. Fisher and Hicks who do not limit their criteria to levels of production alone and therefore explicitly consider distribution. Little[18] and Fisher[19] admit social orderings of different distributions and Hicks[20] makes an empirical generalization about the distributional impact of a sequence of production changes. Briefly Little's approach is this. He retains the Scitovsky criterion along with the assumption that "relative" real income distribution can be evaluated. He compares an initial position with an altered state in which both the level of production and pattern of distribution are different. Similarly Fisher focuses on to the question — which of the alternatives are better or worse or indifferent. Distinguishing between income and distribution he characterizes income in terms of commodities and not "real income". This strengthens the empirical viability. He considers some initial total distribution of commodities called a social state. This space of social state is partitioned into sub-social states. This is to indicate the set of social states preferable, inferior and indifferent to it.

This is accomplished in three stages. Firstly, in an ambiguous partitioning accepting unanimity (level of production) as a value judgement. (Similar to Pareto Optimal analysis). Secondly, the extension of the comparable alternatives to the different distribution of the level of income stipulated. Thirdly, mere alternatives are compared with the initial state introducing value judgement which establishes

17. Ayres R. U. and Kneese A. V. Production, Consumption and Externalities *AER* June 1969, p. 282.

18. Little: *A Critique of Welfare Economics*, Oxford, 1952

19. Fisher, F. M.: Income Distribution, Value Judgement and Welfare. *The quarterly Journal of Economics*, 1956, pp. 380-424 and also 1957 pp, 322-324.

20. Hicks: Valuation of Social Income — Economica, 1942

the required minimum changes in income to "make the initial state socially indifferent to some particular redistribution of the initial income level."[21]

Though Fisher's method increases the range of choices over which actual welfare comparisons can be made without the need for compensation, his model, however, does not represent an achievement for the New Welfare Economics. The comparability is achieved by Fisher solely by the itroduction of value judgement about income and distribution which is the very thing that New Welfare Economics seeks to avoid. The improvement made by Fisher rests in expressing the distributional perference indirectly in terms of commodities rather than directly through money income. It is essentially an "Improved variant" of Bergson's distribution concensus approach.[22] Income changes are suffictent indices of actual welfare changes only where the accompanying distributional changes are either advantageous or sufficiently disadvantageous.

Without the provision of a refined core of criteria the science of welfare economics serves no purpose with all its analytical tools. The generally recognized criteria are that potential welfare increases when production increased all round, and that welfare deteriorates with allround decrease in product. But there is no certainty as to welfare improvement if in some cases production has *decreased. Still the above criteria are of great importance because they provide us with the only feasible means of calculability when the changes[22] do and do not occur. Various welfare criteria are suggested to form a basis for further quantitative analysis of the states of welfare. Beginning from Pigou all the economists who had anything to do with welfare have given one criteria or other and justified why they would hold on their criteria.[23]

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21. Rothenberg, J. F.: *The Measurement of Social Welfare*, Prentice Hall Ltd., 1961, pp. 107.

22. Rothenberg, J. F.: *The Measurement of Social Welfare*, (Prentice Hall Ltd.) 1961, pp. 110.

    Rothenberg, J. G.: *Measurement of Social Welfare*, Prentice Hall Inc. 1961, pp. 89.

23. (1) Eckstein R. S. — Welfare Criteria and changing tastes *AER* March 1962, pp. 133-135

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* increased and yet in other conditions, production has

The main criticism of compensation principle comes from Scitovsky followed by E. T. Mishan.[24] He shows that Kaldor-Hicks criterion gives inconsistent results in that the change and its elimination may turn out to be capable of increasing welfare and thus contradiction arises mainly because compensation is not paid, resulting in a different distribution of real income before and after the change. Compensation can be regarded as an acceptable criterion of potential welfare only when it comprehends all possible and conceivable distribution of welfare establishing a consistent result. The paradox has to be eliminated and the ambiguity minimized. Even if compensation is paid it may not be followed by increase in welfare because ultimately that depends on the method of the distribution of compensation. To whom is the compensation paid and in what proportion ? Is the compensation paid once for all or continued? There is an attempt of a reformulation of the Kaldor effect by Moor.[25] But Kaldor writing as late as in 1960 still feels 'unrepentant' rejecting the impossibility of interpersonal comparisons of utility as an active bar to "economics as a science saying anything by way of prescription."[26]

During the period under study there has been the usual assessments, reappraisals and critiques of welfare economics [27] discussing thread-

(2) Robertson, D. H. and others "Welfare Criteria; an exchange of notes, *Economic Journal*, March, 1962, pp. 226-44 and *Economic Journal*, 1963, pp. 338, 780, 778, 342 and 771.

(3) Dobb M. A. Further Comment on the Discussion of Welfare Criteria. *Economic Journal*, December, 1963, pp. 765-71

(4) Kennedy C. Welfare Criteria, A further notes *Economic Journa* June, 1963, pp. 328-41 and December, 1963, pp. 780-81

(5) Lydall H. F. Little's Criteria. An Empty Box *Economic Journal* 1965 p. 379

(6) Mishan E. T. The Welfare Criteria that Aren't (Notes) *Economic Journal*, 1964, p. 1014

(7) Nath S. K. Are Formal Welfare Criteria Required? *Economic Journal*, 1964, p 548.

24. Mishan E. J.: Welfare Criteria. Are Compensation Tests necessary? *Ecouomic Journal*, June, 1963, pp. 342-50

25. Kaldor N. : Essays on Value and Distribution. General, Duckworth and Company Ltd , 1960, (Introduction) page.

26. Moor A. M. : A Reformulation of the Kaldor Effect, *Economic Journal*, 1967, p. 84

27. (1) Mishan E.J.: *Welfare Economics An Assessment*, London, 1969 (a compilation)

bare the nature and necessity[28] of welfare economics, its anatomy[29] and its normative[30] and institutional implication.[31]

Borderlining the content of welfare economics still continues to be a problem. For Hicks the delimitation of Welfare to all such things which have value looks rather restricted. "Pigou's contention is that the concern of the Economist is with a part of general welfare which he calls economic welfare."[32] The trouble starts when the "philosopher tells us that social good is not a thing which can be divided into parts".[33] This division, however, has "sunk in and has sunk in very deeply".[34] Hicks wants to paint on wider canvass than Pigou when it comes to Economic Welfare. He feels that Economic Welfare can be "conceived as something wider than this." He would define welfare economics so as to include subjective elements 'surpluses which are not fully expressed in the money value of goods and services as well as the 'efforts'.[35] Thus he includes even those elements that could be brought indirectly into relation with the 'measuring rod of money'. Even after having made such an extension, the characteristic feature of "Economic Welfarism" viz. that the ends of Economic life, are within economics is quite in tact. As for the question of disharmony between general welfare and economic welfare, Hicks resolves that "if the economist has shown that a particular course of action is to be recommended *for economic reasons* he has done his job".

Sturmey in his study relating Income to economic welfare takes a similar but emphatic stand. The total welfare is made up of all the

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(2) Meade J. E.: A critique of Welfare Economics (A Review Article of I. M. D. Littles II Edn.) *E. J.* 1959 p. 124.

(3) Nath S. K.: *A reappraisal of Welfare Economics*, London, 1969.

28. Mishan E. J. : The nature and necessity of welfare Economics, *Indian Journal* of Economics, July, 1961.

29. Patanaik, K. Prasanna, The Anatomy of Welfare *Economics and Political Weekly*, 12 September, 1970.

30. Bergson, A. Essays in Normative Economics.

31. Copeland M. A. Institutionalism and Welfare Economics, *American Economic* Review, 1958 p. 1.

32. Hicks J. R. : Essays in World Economics, Clarendon Press, 1969, pp. ix

33. and 34. Ibid

35. Ibid

things we enjoy. Despite the impossibility that total welfare cannot be split up a large part of the happiness derived by individuals is from "things obtainable with money". This is economic welfare, the level of which is often referred to as the standard of living. But he has a broader concept of the staudard of living. It is much more than "a count of things his income buys" for it includes "socially provided services".[36] Therefore economic welfare is equivalent to all things money can buy either by the individual himself "received in kind or provided collectively by the State."[37] The symbol of this economic welfare both of individual or community as a whole is income. Starting from the Pigovian stand point it looks as though we made a long journey but in the end we find ourselves again in the Pigovian camp-site. As Stigler puts it the view of economists regarding welfare has undergone a complete cycle since the beginning of 19th century.[38]

Surveying the development of policy objectives or preference functions. T. W. Hutchison points to the fact that the 'elaborate,' 'aruduous' and explicit statements of value of preference functions lead to much disagreement and confusion.[39] There is the monistic conception of the objectives of economic policies viz., maximum or optimum welfare and the over simplified value judgements that are fostered by welfare economics.[40]

The fact that there are conflicting interests is more often ignored and there is a temptation to "fend off awkward political choices and decision by justifying with 'objective' answers." He cautions against such a propagation and conjuring away with welfare economic expertise which will sooner or later lead to public confusion and disillusion. Earlier the same view was expressed by Dahl and Lindlom when they observed: "Economic theory has tended to potulate a highly restricted set of goals and reality situations within which maximising takes place." If the policy makers were to accept and translate them they would "often be less rather than more able to make intelligent decision."[41]

36. Sturmey S. G. : Income and Economic Welfare, Longman Greek and Company Limited, 1959, pp. 2.

37. Ibid, pp. 2.

38. Stigler, G. J. New Welfare Economics, AER, 1943, pp. 345.

39. Hutchison T. W., *Positive Economies and Policy Objectives.*

40. Ibid. p. 159 (3), Ibid. pp. 167

41. Dah and Lindlom: *Politics Economics and Welfare*, 1953, pp. 81

Titmuss' Commitment to welfare is a book of wide interest. He touches upon the varied facts of welfare from health, welfare programmes, promotion of investment, human resources like education redistribution of consumption and compensation for disservices with diswelfare. His main thesis is that tbe denial of the fact that economic growth by itself will eliminate poverty without the intervention of social policy.[42] The private enterprise cannot eliminate discrimination. Apart from redistribution he includes fiscal policy and occupational welfare as of two additional categories of social policy.[43] Occupational welfare relates to fringe benefits of employement. Once need is determined fiscal and occupational welfare extend larger benefits to higher income groups. When the three types of welfare are treated jointly, the middle class may enjoy a larger subsidy than the poor for education and housing. This in an important field for further empirical probe.

He recognizes the fact that economics cannot be considered apart from ethical and sociological variables, which is echoed by Parsons and Smelser in The Economy and Society.[44] Of course the work of Marshall and Weber constituted the level of reapproachment between economics and sociology which have not been matched since Pareto also made a noteable attempt at a synthesis. Parsons and Smelser feel that the separation between the two disciplines arbitrarily conceal the degree of intrinsic intimacy between them.

Concrete meaning is given to the concept of welfare only through the institutionalised value system of the society and its various subsystems. The development of individual motivation is a process of internationalisation of social norms and not the independently given basis of social preferences or values.[45] The aggregation of independent preference as community welfare is theoretically meaningless because of an inappropriate theoretical base. A synthetic approach therefore

42. Titmuss: Commitment to Welfare, London, 1968, Chap. 12

43. Ibid. Chap. 16

44. Parson T. and Smelser N. J., The Economy & Society (A Study in the Integration of Economic and Social Theory), London iv Edn. 1966.

45. (a) Vickrey W., Utlity, Strategy and Social Decision Rules, QTE. 1960, pp. 507

(b) Tullock G. Utility, Strategy and Social Decision Rules ; Comment QJE ; 1961, pp. 495

will not generate the usual theoretical embarassment often in welfare economics.[46]

The relevance of Arrow's conclusions are also seriously questioned by Little and others.[47] Arrow's functions are not the same as Bergson's function and his negative functions have little to do with welfare economics. Little adds that Bergson's welfare function was meant as a 'process' or 'Rule' to indicate the best economic state as a function of the changing environment, the individual tastes being given. But in Arrow's social welfare function, individual tastes in the sense of rank ordering change which establishes the relationship between the social judgements under different individual rankings. The condition of sovereignity which Arrow requires his function to fulfil is meaningless when tastes are givin. In this view Little questions the relevance of Arrow's work to the theory of welfare economics. But yet others like Rothernberg are of opinion that with its high level of abstraction its method of symbolic logic and analytic innovations, Arrow's social welfare function can be interpreted to include Bergson Economic welfare function.[48]

Like Arrow, Lange also is of opinion that the attempted restatement in terms of new welfare economics, dispensing with inter-personal comparison would only restrict the field of welfare economics.[49] To be rid of comparability, the total welfare is redefined as a vector whose

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46. Vanek J. A. Rehabilitation of Well-behaved Social indifference curves, RES, 1965 — pp. 37

47. (a) Takashi N. On Social Welfare Function. *Quarterly Journal of Economics*, 1963, p. 156.
    (b) Gee J. M. A. Adam Smith: Social Wellfare Function, *Scottish Journal of Political Economy*, November, 1968.

48. (a) Coleman J. S. The Possibility of a Social Welfare Function, American Economic Review, 1967, p. 1105
    (b) Pank and others: The possibility of a Social Welfare function. *American Economic Review*, 1967, p. 1300

49. (a) Lange O. The Scope and Method of Economics. *Review of Ecnomic Studies*, 1945-46, p. 68
    (b) Lange O. The Foundation of Welfare Economics: *Econometrica* 1942
    (c) Diamon P. A. Cardinal Welfare, Individualistic Ethics and Interpersonal Comparisons of Utility. *Journal of Political Economy*, 1967, p. 765

components are the utilities and individuals in the Community. Let U^{50} be the utility of the ith individual. Total welfare is then the vector.

$$U=(U^1, U^2 \ldots\ldots U) \ldots\ldots\ldots\ldots (1).$$

Vectors are ordered on the basis of the definition that a vector is greater than another vector when at least one of its components is greater than the corresponding components of the other and none is less. It is impossible to increase the utility of any of the individuals without decreasing that of others. U is maximized i.e. when U^1 =max (i=1, 2—o)—(2) subject to U^i = J (Constant J=1, 2 ... i — 1, i+2 ... Q).

Utility of each individual is a function of the commodities in his possession. Denoting by $x_1 i$, x^i_2 $x^i_3 \ldots x^i$ the quantities of n commodities in the possession of the ith individual, his utility is given by

$$U^i = f^i (x_1{}^i, x_2{}^i, x^i{}_3 —— x^i{}_n)$$
$$U \doteq (U^1, U^2 ———, U^o) ———(2.1)$$

Thus a vector increases when at least one of its component increases and none decreases. In this position it is impossible to increase the utility of any person without decreasing that of another. Gorman has analysed the structure of utility functions. Demand functions are derived from SMAC type of utility functions [51] and Majumdar's contribution to behaviouristic cardinalism [52] is also worth mentioning.

In a recent publication, Scitovsky, has brought together all his articles previosly published in one volume beginning from his 1941 article on "a Note on Welfare propositions in Economics and has added a critique on present and proposed standard (Ch. 14) written in 1960. Here he reiterates the problem of distribution of income and wealth which complicates the aggregation of preferences. He also points to the other difficulty that of aggregating individual preference functions in a

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50. Gorman. W. M. The Structure of Utility Functions, *Review of Economic* Studies, October, 1968.

51. V. Mukerji. Demand Functions derived from the SMAC and modified SMAC type of utility functions *Artha Vijnana*, December, 1969.

52. Davis R. G. and Mellon W. G. Majumdar. On behaviouristic Cardinalism *Economica*, 1960, p. 253.

democratic way into a meaningful (transitive) social welfare function. These are ignored and left to the welfare economists to handle them as best as they can. "But no sooner have welfare economics and Welfare economists been swept under the table than a new and even more formidable set of difficulties arises and consumer sovereignity itself is highly questioned on many grounds. There is a general mistrust in consumers' judgement (Professors *Baran* and *Galbraith*) reasons being the inadequacy of market information and in adequacy of the alternatives provided by the market—Scitovsky points to the collective provision of services by the Government and concludes thus " the economist can no longer regard his standards as given to him from outside, but must make a judgement of his own what standards to accept with what limitation and with what qualifications [53]. A few other studies on the relevance of consumption and economic welfare are also made[54].

Lancaster perhaps is the first person to introduce leisure into the analysis which opens up vast vistas for deep study[55]. Lancaster's analysis it is held is not fruitful, and leads only to erroneous conclusion and is not necessary. A valid proof required a three, person analysis. Lancaster's analysis could still be sufficient for the purpose if it could be proved a that set of common prices will not decrease group welfare. Lancaster fondly hopes that his results could "be generalized for a number of individuals and commodities by a progression of two-by-two comparisons. [56]

Arrow's Impossibility Theorem and his social welfare function (which is a summation of all individual preferences) have serious limitations when it is a question of immediate application for the choice

53. T. Scitovsky *Paper on Welfare Growth*, London, 1964.

54. (a) Modigliani and Brunberg R. I. Utility analysis and the consumption function. An Interpretation of Cross section Data (in) Kurihara (Ed) *Post-Keyacman* Economics, 1954.

(b) Tsan Van Hoa: Consumer Demand and Welfare Indexes. A comparative study for the United Kingdom and Australia, *Economica* November, 1969, p. 409.

55. Lancester K. Welfare and Expended choice (Notes), *Economic Journal*, 1959, p. 805

56. Sapostiky R. A Note on Leibensteins notes on Welfare and the theory of Democracy. Each Journal, December, 1963, pp. 355-58.

of economic politics.[57] When the intervention of democratic governments in the economic life is becoming imminent, it is almost ridiculous that welfare economics, designed to be an apparatus of thought for choice of economic policies, should fail us utterly. It is this fundamental inadequacy that led to Leibenstein's interpretation of welfare economics in relation to the theory of democracy.[58] He is concerned with the larger but less technical question of "whether the non-minority (democratic) rule interpretation of democracy is consistent with economic choice criteria implicit in the normative aspects of micro-economic theory to the extent that these are made explicit by modern welfare economics."[59] An examination of this leads him to conclude that generally "democratic choices are not usually in accordance with modern welfare economics." He proves this by showing that majority preference points, as reflected by the voting technique, are not likely to be universal consent points.[60]

Section II: Political aspects of welfare economics

Following the lead given by Social Welfare Economists, Myrdal[61] and other economists have studied economic welfare in the proper perspective of the State policies with reference to the system of the economy[62] or made country-wise case studies.[63]

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57. (a) Pauk R. E. Muller D. C. and Coleman, J. S. The Possibility of a Social Welfare Function, *American Economic Review*, December, 1967
(b) Wilcox C. Toward Social Welfare: An analysis of programme, and proposals attacking poverty, insecurity inequality of opportunity, Illinois, 1969.
58. Leibenstein, H.: Notes on Welfare Economics and the Theory of democracy, *Economic Journal*, 1962, p. 209
59. Ibid. pp. 299
60. Also see
Williamson G. E. and Sargeant T. Social Choice A Probablistic Approach *Economic Journal*, 1967 p. 797
61. Myrdal. G. *Beyond the Welfare State.*
62. (a) Dobb. M. *Welfare Economics and the Economics of Socialism.* Towards a Common sense Critique. London, 1969.
(b) Worland, S. Philosophy Welfare and the system of National Liberty. *Review of Social Economy*, September, 1963.
63. (a) Agarwal R. D. *Economic Aspects of Welfare State in India,* Allahabad, 1967.
(b) Condliffe J. B. *The Welfare State in New Zealand*, 1963.
(c) Colien, W. J. and Brazer H. E. *Income and Welfare in the U.S.* New York, 1962.

Jeremy Bentham set the ball rolling with his utility-based political theory yet when the Government (viz. democracy) designed squarely on its precepts has prospered for nearly two hundred years, the utility based political theory had an abortive end. Welfare economics has unearthed no answer to the question of interpersonal comparisons of utility in the absence of a social welfare function.[64] The generation of such functions has been delegated to the political process since it is the formal social choice mechanism. In the absence of political scientists to do the job economists have laid their hand at it notably in the work of James Buchanan and Gordon Tullock (1965) and Anthony Downs.

Kenneth Arrow (1951, 1969) had already explained how it is *not* done and that explanation has had more impact than the attempts to explain how it is done. (Bergson, Social Welfare Function distinguished from Arrow's Constitutional Function) Arrow was interested in determining collective or social choices on the basis of individual (voter) preferences. Arrow set up four seemingly reasonable conditions which a social choice mechanism should be expected to meet and found that, as a general proposition no such mechanism could be devised.[65] No one has disproved Arrow's Possibility Theorem, although some, particularly Duncan Black (October 1969) have recently raised some hard questions about the relevance of Arrow's conditions (General Possibility Theorem and the Possibility Theorem for two alternatives) Arrow proved that the method of majority rule applied to two alternatives does not satisfy the four conditions and that the possibility theorem for two alternatives was in a sense the logical foundation of the Anglo-American two-party system (1951 p. 48). The restricted theorem has been largely ignored by later writers as trivial from a social welfare function viewpoint. Arrow did not pursue the implications of his restricted theorem. His concern and the concern of most economists[66] have been for the more general problem and

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64. Prasanna K. Pattanaik, Risk, Impersonality and the Social Welfare Funttion. *Journal of Political Economy*, December, 1968.

65. Fishburn P. C. *Utility Theory for Decision-Making*, London, 1970.

66. (a) Haefele E. T. A Utility Theory of Representative Government *AER*, June 1971, p. 350-367

    (b) G. Tullock. The General Irrelevance of the General Impossibility Theorem *QJE*, May 1967, pp. 256-270

implicit in such concerns, the analogy with general equilibrium theory in economics. Such concern and analogy are almost demanded by the logic of individual preference orderings and a social preference ordering by themselves. Dennis Mueller expressed the concern of many economists about the efficacy of vote trading when he observes—"when voters are able to make and keep vote trading agreements, their welfare will be greater than if no agreements were made."

A great deal of thought has been given to the problems of governmental policy and to the question of proper allocation of resources, optimality and efficiency. [67] But little attention has been given to the actual process of decision-making.[68] Tullock discusses one particular method of making governmental decision—majority voting and derives conclusions about its implication for resource allocation and government policy.[69] A workable definition of a welfare programme is given by M. S. Gordon. It is defined as any social programme designed to transfer income in cash, in kind or in the form of services to those whose capacity for self support has been impaired, interrupted or (in the case of children) has not yet reached maturity. [70]

Economics of education an important branch of welfare economics, which is outside the purview of the present study has been given much more attention than the related branches like, health and other social services. Compared to the plethora of studies on education there has been but a scant treatment [71] of the economics of medical care. Arrow [72] gives a methodological background and makes generalization about medical care market and differentiates it from the usual commodity markets. The behaviour of the market is compared with the competitive model disregarding the fact of uncertainty. Arrow does not

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67. Leonid Hurwies Optimality and Informational Efficiency in Resource Allocation Processes in Mathematical Methods in the Social Sciences, Staaford, 1960, Ed. K. J. Arrow, S. Karlin and P. Supplies ch. 3. pp. 27-46
68. Witte J. G. Jr. The Micro foundations of Social Investment Functions, *Journal of Political Economy*, 1963, p. 441.
69. Tullock G. Problems of Majority Voting, *Journal of Political Economy* 1956, pp. 571-79
70. Gordon M. S. *The Economics of Welfare Policies*, London, 1963.
71. Weisbrod B. A. *Economics of Public Health, Philadelphia, 1961.*
72. Arrow K. J. *Uncertainty and Welfare Economics of Medical Care, American Economic Review*, Decemeber, 1963, p. 941.

draw any policy inference but only provides a framework for that. However, his explorative and tentative study assigns a normative hue to medical economics. The comparison of the obvious characteristics of the medical care industry with the norms of welfare economics only make clear that the norms of welfare economics are but special problems of medical care and can be explained as adaptations to the existence of uncertainty in the incidence of disease and in the efficacy of treatment [73].

The reason why the development of medical economics is hindered unlike economics of education is outlined by Somers [74]. A powerful reason is the longstanding hostile professional environment-opposition not only to lay interference in medical and health matters but even to the very concept of planning resource allocation or even a rigorouscost-benefit analysis. These external deterrants when gradually modified, the interest of economics profession in policy issues of all kinds has declined.

The result of this continuing divorce between one of the most challenging public policy areas of our day and the academic discipline which has to offer most with respect to rational policy determination is most unfortunate. Vast medical-care programmes are put into effect almost without the benefit of assistance from professional economists.[75] Following this dig at the profession a beginning is made in this direction in Mushkin's and Weisbrod's attempt to ascertain the total health expenditure per capita over the working life of the 1960 working force of the U.S.—a technical problem of measurement and a similar one on the loss economic welfare of the victims of automobile accidents. [76]

Section III: Measurement of economic welfare

Tapas Majumdar's book Measurment of Utility gives the several attempts at measurement in brief outline. The degrees of measurability

73. Arrow K. J. Uncertainty and welfare Economics of Medical Welfare, *AER*, December, 1963, p. 941.
74. Somers. The Economics of Health and Medical Care, *American Economic Review*, June 1965, p. 642.
75. C. M. Lindsay Medical Care and the Economics of Sharing, *Economica*, November, 1969.
76. Holmes R. A. On the Economic Welfare of the Victims of Automobile Accidents, *American Economic Review*, March, 1970.

that might be assigned to utility in a welfare state is elaborated and he divuleges at length on a critical examination of the five main utility theories of viz.,

(1) Introspective cardinalist—Marshall

(2) Introspective ordinalist—Hicks

(3) Behaviouristic ordinalist—Samuelson

(4) Behaviouristic Cardinalist—Morgenstern and Von Neumann

(5) Introspective Cardinal revivalist—Armstrong.

The purpose of T. Majumdar is twofold. Firstly to sumarize and evaluate the various approaches to the concept of utility and secondly to indicate which of these concepts forms the most appropriate basis for welfare theory. Majumdar has been successful in the first. But he does not solve the "admittedly difficult problem of how to use positive theory most efficiently to promote our admittedly unsatisfactory welfare theory."[77] Majumdar has not even indicated the dimensions of the problem.

Many of the problems that one confronts in micro-analysis of welfare economics could be circumvented when we take recourse under the Bergsonian mantle of etihical characteristic of welfare criteria. In the context of macro-analysis if it is to be a prescriptive science its success of application rests entirely on the macroplane. A reformulation of concepts of welfare to become serviceable tools of policy formulation is essential.[78] The study therefore does not entangle itself with long drawn-out controversy regarding the measurability of utility. It takes up the discussion of measurement of welfare of the group or community as a whole much on the lines of Pigou.

77. Rothenberg J. Tapas Majumdar — Measurement of Utility, *Journal of Political Economy*, 1960, pp. 314,

78. "What is required is an ordering of states of the world which holds over time and which permits comparison between two states of the world at two different points of time. Hence the task boils down to one of redefining individual ordering from which social ordering can be derived.

Another work of the same nature was by Vickrey [79] who attempts to improve upon the cardinal utility measure of Armstrong[80] giving rise to a unique basis for interpersonal comparison. He affirms that for social welfare function purposes the Bernoullian utility function which has been given modern vogue by Von Neumann and Morgenstern,[81] is more promising of results for like the independent utility function the Bernoullian [82] utility function provides no immediate basis for interpersonal comparison. Rothenberg's measurement of social welfare and Majumdar's Measurement of utility are two important contributions and few intermittent articles supplement by them by examining with mathematical proofs the admissibility of measurable utility function [83], measuring non monetary utilities in uncertain choices[84] and by suggesting a utility measure based on time preference. [85] Majumdar's two purposes are (1) to summarize and evaluate various approaches to the concept of utility and (2) to indicate which of these concepts forms the most appropriate basis for welfare theory. Neither treatment is without defect nor the work is more successful in the first. His treatment is not original. He summarizes briefly but his performances is marred by a few inaccuracies, some lose analysis and some misleading interpretation.

As is evident on many other theoretical issues we seem to be reverting to classical doctrines and more so in welfare economics where wealth and welfare in the modern development spheres are almost treated as identical. Wealth of Nations is understood as implying the well-being or welfare of nations. [86] The findings of a panel on the

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79. Vickrey W. W. Utility, Start Gg. and Social decision rules, *Quarterly Journal of Economics*, 1960, pp. 507-35
80. Armstrong W. E. Utility and theory of Welfare, Oxford Economic Papers, October, 1951, pp. 259-71, J. Von Neumann and O. Morgenstern
81. Theory of Games and Economic Behaviour. Princeton, 1947
82. Bernoulli P. Exposition of a new theory on the Measurement of Risk *Econometrica*, January, 1954, pp. 23-36
83. Qirk I. P. and Sapostky R. Admissibility of Measurable utility function *Review of Economic Studies*, 1964.
84. Smith V. L. Measuring Non-monetary utilities in uncertain choices, *Quarterly Journal of Economics.*
85. Enzer H. A. Utility measure based on time preference, *Economic Journal* December, 1968, pp. 888
86. Palmer *The meaning and Measurement of the National Income and Other Social aggregates.*

dynamics of well being make interesting study.[87] Several problems arise. Though the individual is the basic unit the fact that they live in families deter us from making strict individualistic comparisions. An unemployed dependent of a rich family may be quite well off compared to an employed head of a relatively poor family. The income and its composition of individuals differ according to their family environs. This even leads one to ponder over the question whether even per capita income could be a better than per capita income as an index of economic welfare.[88]

One among the many non-monetary variables is economic well-being. The real income as against the money earnings must include "imputed rents",[89] returns from do it yourself activities, food, clothing and housing received from employment. The variable affecting the "well offness"[90] are income, composition of family, leisure, housing etc. Three major types of variables could be identified. They are (1) economic behaviour, (2) economic status and, (3) attitudes. The set of economic behaviour determine the family economic status. This in turn leads to changes in attitudes which again result in a change in economic behaviour. This is therefore a circular process. Instances of such economic behaviour are, investing in human capital of the family or moving to a better job, working hard, using the family resources economically and avoiding risks.[91]

Economic wellbeing can be perceived from many angles. But in this branch of economics unlike in others, the "single dimensional money income measure"[92] leaves much to be desired. The need for an adequate measurement becomes more apparent with respect to the current times deep concern for the relative and absolute economic well

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87. Smith J. D. and Morgan J. N.: Measures of Economic Welloffness and their correctives. *American Economic Review*, May, 1969, pp. 451.

88. NBER *Towards improved social and economic measurement.* 48th Annual report, New York, 1968.

89. Mishan E. T. Rent as a measure of welfare change (communications) *American Economic Review*, 1959, pp. 386

90. Morgan J. N. and Smith J. D.: Measures of Economic Welloffness and their Correctives, *American Economic Review*, 1961, pp. 457.

91. Weisbrod and Hansen: "An Income-Net worth appraach to Measuring Economic Welfare", *American Economic Review*, 1968.

92. Weisbrod and Hansen: "An Income-Net worth approach to Measuring Economic Welfare", *American Economic Review*, 1968.

being of various sections of population and for equitable distribution of income and wealth.

In later writings of Hicks we find yet another view-point on the measurement of welfare. With new welfare economics completely branching off from the cardinal fold and with the emergence of the compensation principle the modern economists were trying to evolve indicators other than the dubious income concept. Distribution matters though recognized to be important were advisably excluded "in matters of practical policy".[93] The fact that compensation could be paid to the losers from the gainers is sufficient condition showing increase in welfare. This is linked up directly with actual welfare. This is a mixed approach.

Weisbrod and Hansen in their article [94] develop a new approach for measuring current economic welfare which is operationally feasible and broader in scope than the traditional money income measure. The measure proposed is based on a combination of current incomes and current net worth (assets minus liabilities). These are made commensurable by converting net worth into an annuity value, which is added to current income. Yet even this leads to policy prescriptions and is rather different from those generated by current income measure of economic welfare.

Welfare loss from monopoly should include the reduction in what one of the authors has called x-efficiency as well as the extent of allocative inefficiency and therefore the combined welfare loss from monopoly may be very much larger than the usually calculated loss. A shift from monopoly to competition has two possible effects. (1) the elimination of monopoly rents and the reduction of unit costs. Both these effects should be included in estimating welfare losses from monopoly.[95] Comnor and Leibenstein, in their analysis on the shift from monopoly

93. Rothennberg J. F.: *The Measurement of Social Welfare Practice,* Hall Inc. 1961, pp. 117.

94. Weisbrod B. A. & Hansen W. L.: An Income — Net Worth approach to measuring economic welfare, American Economic Review, December, 1968, p. 1313.

95. W. S. Comnor & H. Leibenstein: Allocative Efficiency x,—Efficiency and the Measurement of welfare Losses *Economica,* August, 1969, 305.

to competition conclude as follows. It appears that there may be many cases where the clear welfare gain associated with the cost of effect of competition is a significant pointer to the possible loss on "second best" grounds from the reallocation of inputs ".[96] The likelihood of an improved welfare position resulting from a single industry shift from monopoly to competition would seem thereby to be greatly enhanced.

On the applied side a comparison is made of the consumer behaviour between United Kingdom[97] and Australia through welfare indices. A model of linear expenditure relations is constructed by exploiting the direct addition of preferences. A cost of living index is then developed using Fisher's money flexibility linking income, price elasticities and the seperable utility functions. Finally the analysis of covariance is applied to examine the possibility of homogeneous demand patterns between U. K. and Australia. Such attempts are sure to contribute towards a systematic analysis of consumer behaviour on a global basis.

In most cases of measurement of economic welfare the oft used analysis is the cost-benefit comparison. Great strides had[98] been made in cost benefit analysis and the recent survey by Prest and Turvey gives a wider coverage to the development and application of the analysis. A theoretical examination of the welfare aspects of cost-benefit analysis was made by J. V. Krutilla and others.[99]

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96. Ibid, p. 309.

97. Tram Van Hoa. consumer demand and welfare indexes. A comparative study of U. K. and Australia, *Economica*. November, 1969, p. 409.

98. Prest A R. and Turvey R. Cost Benefit Analysis, A survey, Economic Journal, 1965.

99. (a) Krutilla J. V. Welfare aspects of Benefit cost analysis *Journal of Political Economy*, 1961, p. 226.
    (b) Musgrave. Cost Benefit Analysis and the theory of public finance, *Journal of Economic Literature*, September, 1961.
    (c) Mass A. Benefit — Cost analysis, its relevance to Public Investment Decisions, *Quarterly Journal of Economics*, 1966, p. 208.
    (d) Feldate in M. S. Net social Benefit calculation and the public investment decision. *Oxford papers*, March 1964, p. *114-3.*
    (e) Weisbrod B. A. *External Benefits of Public Education*, Princeton, 1964.
    (f) Marglin S. A. *Public Investment criteria Benefit and cost analysis for Planned Economic Growth*, 1968.

Many Governments in recent years have resorted to open inflation as a method of financing the Government sector of the economy for the apparantly painless character of this method. This is still continued in spite of the evidence for the past that it leads to unambigously bad effects upon feasible welfare.[100] To keep separate the redistributive — disruptive effects of open inflation on the one hand and for the welfare cost associated with the cash balance effect on the other Bailey gives a model with the following characterics (a) expectation of a given unchanged rate of inflation ; (b) all appropriate adjustments are made by everyone in the face of this expectation ; (c) bank deposits are not used as money. The incidental re-distribution of real income is avoided in this model as well as the incidental redistribution of resources in the private economy resulting from the heightened uncertainty.

The liquidity preference function in the model shows the demand for real balances of currency at full employment level of real incomes as a function of the money rate of interest U curve LL in figure. When the money rate of interst consistent with a stable price level is r_0 money people wish to hold is $\frac{(M)}{(P)^{\circ}}$ when interest increases to r_1 because of a rate of inflation r_1-r_0, the real cash balance people wish to hold is $\frac{(M)}{(P)_1}$. This implies that as soon as the government announces that amount of rate of interest say r_1-r_0 everyone in order to reduce his real cash balances, will at once try to purchase physical assets, including consumer goods with the consequent increase of price in the proportion $\frac{(M)}{(P)_0} \Big| \frac{(M)}{(P)_1}$. This curve LL can be interpreted as the marginal productivity of cash balances. The shaded area in the figure measures the aggregate loss of productivity (utility) resulting from the destruction of real cash balances which occurs when prices rise initially at the announcement of the impending inflation.

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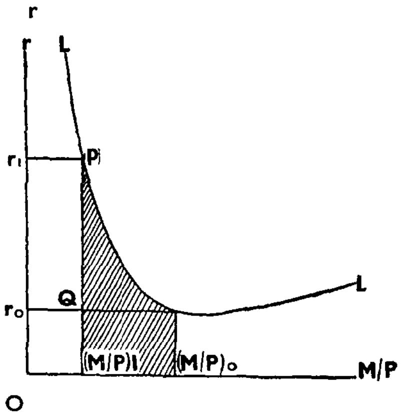
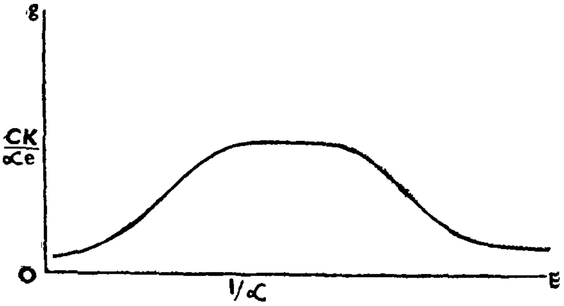
100. (a) Bailey. M. J. The Welfare cost of Inflationary finance, Journal of political Economy, 1956, pp. 93-110.

(b) Friedman. M. Essays in Positive Economics (see his discussion of the Infiationary Gap) Chicago, 1953, pp. 253-57.

The further rise of prices because of inflation is sufficient to keep real balances at their new low level and this loss of productivity or welfare will continue as long as inflation lasts. Bailey's demonstration



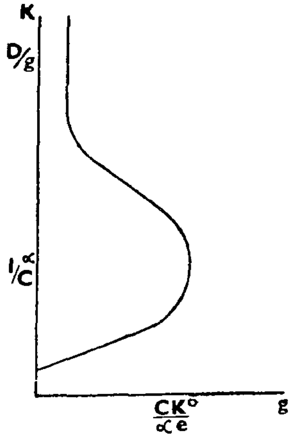
gives the following inferences (a) government's share of the National Income is maximum when the rate of inflation E rises to $\frac{I}{L}$ where L is a parameter (cf. Cagan P. — The Monetary Dynamics of Hyper-inflations, *Econometrica*, October, 1954) whose variation among all the countries studied is statistically significant, and at higher rate of inflation government real revenue falls and approaches zero as the rate of inflation approaches infinity as in figure.



(b) If the Government tries to obtain the maximum possible revenue by inflation, the welfare (or the excess burden) in doing so will be at least 72 percent of the amount of the revenue as is evident from the figure.[101] Contrary to the above belief Ward shows that if money

101. Ibid See pages 435-436 and 447-448.

wages are not flexible and hence if positions of unemployment equilibrium are possible, then the expectation of inflation can have good effects on feasible welfare.



While the expectation of inflation has a negative effect on attempts to achieve full liquidity, it has unambiguously positive effects on attempts to achieve full employment and may have positive effects on attempts to maintain a real rate of interest consistent with optium growth. The upshot of these opposite effects on economic welfare resulting from inflation is to strengthen the case for the payment of an appropriate rate of interest on money.[102]

The findings of the study by Foster and Beesley, estimating the gains and losses expected to result from building the Victoria line could be mentioned as an application of the same old method measuring the surplus of social benefits over social costs expected to result from the investment, otherwise called the consumers' surplus return over investment. They make a comparative analysis with social and other alternatives and show categorically the time saving, fare saving and other benefit in money terms.[103]

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102. Ward R. N. Inflation, Unemployment and Economic welfare. *American Economic Review*,, September, 1970, pp. 631.

103. Foster C. D. and Beesley Estimating the Social Benefit of constructing an underground railway in London, *in Readings in Welfare Economics*, AEA, pp- 462-519.

Also see

Hermann Enzer — A utility measure based on time preference *E. J.* December, 1968, pp. 889-897.

In benefit measurement studies defence has received the least attention though a lion's share of the budget goesinto defence. This is because the cost benefit analysis when applied in this area is just cost analysis benefit of which is not amenable to economic analysis. Enzer falls back on a utlity measure to provide a reasonable approximation into the relative utilities of a set of items that do not possess market prices. Like Neumann-Morgenstern measure or the Pareto-Lange approach of comparing utility difference the suggested measure is not a ratio measure with a natural origin but an interval measure with an assumed origin. The measure presented is non-probablistic. If there is no meaning in equal difference of utility then money is as good a way as any of measuring them. If as in the case with utility what one wants to measure cannot be measured directly one has to find a suitable surrogate that can be measured and which is closely related to the thing one would like to measure in a 1 : 1 relation. Time if appropriate would appear to be a good surrogate since it is continuous, as well as divisible.

Section IV: Taxes and Prices

Welfare discussions relating to fiscal plane have so far confined only to taxation. But in recent years, there is a growing awarness[104] of the close affinity between welfare economics and all faces of public finance including public investment and public expenditure.[105] All discussion on pure fiscal economics correlate the welfare issues since the very theory of budgeting has become welfare — oriented.[106]

Simple and deceptively plausible theoretical inexactitudes followed the famous controversy over the welfare effects of direct Vs indirect taxes[107] until the comparatively recent view that in general there exists no rigorous basis for favouring one of these forms over the other.[108]

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104. Canley. *Public Finance and General Welfare.* New York. '61.

105. Samuelson, P. A , Pure Theory of Public Expenditure in Margolis J & Posner. M. V., (Ed) *Analysis of Public Economy'*

106. David M., Welfare Income and Budget Needs. Review of Economic Studies. November 1959; pp. 393-92.

107. NBER. *Taxation, Resource Allocation, and Welfare* — The Role of Direct and Indirect taxation in the federal Revenue System (Princeton) 1964.

108. David Walks. The Direct—Indirect Tax Problem: Fifteen Years of Controversy *Public Finance* Vol. 10. No. 2 (1955).

Goetz deals with the closely parallel but widely held misconceptions. These inexactitudes occur in the welfare analysis of tax choice.[109] When the required revenue may be raised through the imposition of a partial or "specific" tax on any of a number of commodities suitable as alternative bases, in particular the theoretical rigour of traditional criteria such as those favouring taxation of goods with low elasticities or rates of substitution is examined critically. The norms considered are analyzed solely in terms of conclusiveness within the single-person partial-equilibrium framework which the formulation implies.

The use of burden criteria which has won wide and continued acceptance is of doubtful validity. It is oversimplified because of the assumption of perfect correlation between index of physical consumption readjustment and welfare readjustment.[110] D. Dosser [111] analyses the welfare effects of tax unions and Heins examines the many related issues like negative income tax, head grants and public employment programme with economic analysis.[112]

Sharp's article in 1966 [113] triggered off a pointed controversy [114] for over four years. He criticized the School Report (HM SO. 1964- Road Pricing: Ministry of Transport) and showed the several pro-

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109. Morag. A., Is the "Economic Efficiency" of Taxation Important? *Economic Journal* 1959 p. 87.

110. Goetz., Charles J., Traditional Welfare Norms for specific Tax²s. QJE. May. 1970. pp. 331-36

111. Dosser. D.' *Welfare Effects of Tax Unions*

112. Heins. A. J.. The Negative Income Tax, Head Grants and Public Employment Programme. A Welfare Analysis. *The Journal of Human Resources etc.* 1970.

113. Sharp. C. H., Congestion and Welfare *Economic Journal* 1966. pp. 806-17.

114. (a) Moore J. H., Congestion and Welfare comment — *Economic Journal.* March. 1968.
(b) Vickrey. W., Congestion charges and welfare. *Journal of Transport Economics and Policy.* January 1961. pp. 107-18 Reply: ibid. pp. 119-25.
(c) Sharp C. H., Congestion and Welfare — A Reply *Economic Journal* June 1969.
(d) Moore J. H., Congestion and Welfare — A Rejoinder *Economic Journal* March 1970.
(e) Sharp C. H., Congestion and Welfare — A second reply *Economic Journal* March 1970 pp. 179.

blems to be faced on the introduction of a congestion tax. The same issue has been raised by Scitovsky while discussing the problems of equality.[115] Moore makes it clear that the allocation of the road space should be determined entirely as an extension of the price mechanism and the congestion tax will "ration a scace good to those users whose relative values are highest". The congestion tax serves to make vehicles pay for the costs they impose on others. But Sharp differs from this position in arguing that the "costs" concerned may be strongly influenced by income distribution and in certain circumstances there may be good reasons for the community indeciding to reject the change which would follow the introduction of a congestion tax. He establishes that persons using the road paying the higher price (including the tax) will be worse off after the tax than before tax. But he ignores the compensatory effects. The consumption of other goods and services may rise or through efficient public expenditure real income may increase. Such new arrangements may actually make every one better off. The controversy has served the good purpose of relating the policy issues to welfare theory.

Provision of public goods is the major part of public expenditure programme. The theory of expenditure has not developed as much as the theory of taxation. Similarly in welfare economics there has been no authentic work on the welfare impact of public expenditure but for a few random discussions indirectly relevant to the issue.[116]

Distribution of income is the third dimension of economic welfare but there is still this link missing in welfare analysis.[117] But the importance of a theory of income distribution in evaluating economic

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115. Scitovsky T., *Papers on Welfare and Growth* London; 1964 pp. 260-1.

116. (a) Marglin S. A., The opportunity cost of public investment *Quarterly Jourual of Economics.* May; 1963 pp. 274-89.
   (b) Mishan E. J. A. Proposed normalisation procedure for public investment criteria; *Economic Journal* — 1967 pp. 777; '69 pp. 980.
   (c) Musgrave. R. A., Provision for social goods in Margolis and posner (ed) *Analysis of the public economy* N. York 1969.
   (d) Samuelson P. A., Contrast between welfare conditions for joint supply and demand for public goods — *Review of Economic Statistics* February — 1969.

117. Morgan J., The Anatomy of Income Distribution — *Review of Economic Statistics* — August 1962 — pp. 270.

welfare needs no stress ; least of all the implications of redistributive effects on the measurement of welfare.

Economists have neglected personal income distribution during the last generation. The Fundamental reason is the absence of a theory of income distribution that both articulates well with general economic theory and is useful in explaining differences among regions,[118] countries and time periods.

While the absolute size of the National Income may not be independent of its distribution, a relatively small change in its size, for practical purposes, can be considered independently of its redistributional consequence in determining the magnitude and direction of change. The distinction for benefit cost analysis is significant as it provides the theoretical basis for benefit cost practices. For if the more simple criteria of Kaldor and Hicks had to be supplemented even by Scitowsky extension above, not to mention Samuelson's all possible distributions test exact judgment with respect to the anticipated change in economic efficiency resulting from a contemplated market allocation could be supported by benefit cost analysis. This follows because the analyst does not have the power to manipulate the distribution of income experimentally before rendering the judgment nor does there exist sufficient information regarding the individual preference maps to simulate results from hypothetical distributions.[119]

There is a vast literature on pricing but they are only implicitly related to welfare economics and a survey of this is also available.[120] The particular application of the general pricing principles to public utilities has been extensively developed in recent years. In situations where it is not possible to charge prices in the strict sense of the term it is all the same possible to impose taxes by using the coercive power of

118. Weintraub. S., An approach to the Theory of Income Distribution., London.' 1960.

119. Krutilla J. V., Welfare Aspects of Benefit cost Analysis JPE. 1961. pp. 228-229.

120. Ruggles N., "Recent Development in the theory of Marginal Cost Pricing Principle and Recent Developments in the Theory of Marginal Cost Pricing → *Review of income studies* — 1949-50.

the State and both have the same allocative effect.[121] Vickrey has explored a variety of such possibilities in the field of municipal services.[122]

Frederick Waugh[123] demonstrates the welfare effects of price stability. With a negatively sloping demand curve, assuming consumers to be price takers and starting from a given price, consumers gain more from a price decline than they lose from an equal price rise. They thereby gain from price fluctuation and accordingly lose from price stabilization. More recently Walter Oi, demonstrated that with a positively sloping supply curve and assuming producers to be price takers, producers also gain from price fluctuations and hence lose from price stabilization.[124]

Massell integrates the Waugh and Oi results and considers the welfare effects of price stabilization in a model containing both producers and consumers. He uses as a measure of gain (a) for producers the expected value of producer surplus and (b) for consumers the expected value of consumer surplus. The effect of price stabilization on the variances of the variables involved is ignored and the model assumes individuals to be indifferent to risk.[125]

The non-farm sector derives a perpetual advantage in respect of its claim in the total income as compared to the farm sector. An important question arises as to how to measure the quantum of the national income that goes to the farm sector in a growing economy. Whether or not the national income is equitably distributed between the farm and non-farm sectors, how much is the difference, what could be the causal

121. (a) Turvey. R., *Optimal Pricing and Investment in Electricity Supply* . An Essay in Applied Welfare Economics., London 1968. Turvey makes it quite clear that the relevant costsf or optimum pricing are social opportunity costs and not accounting costs which raises difficult qnestions concerning the availability of such cost information.

(b) *Electric Utilities — Costs and Performance.*

122. Vickrery W. S., General and specific financing of urban services in H. G. Scholler (ed) *Public Expenditure Decision in the Urban Community* Washington — 1963.

123. F. V. Waugh "Does the Consumer Benefit from Price Instability?" *Q.JE* — August 1964 PP. 602—14

124. Walters Oi., "The Desirabilit yof Price stability under perfect Competition *Econometerica.* January 1961. 58-64.

factors responsible for automatic disparity and how to overcome these are some pertinent issues involved in this question.

P.N. Mishra[126] provides a mathematical analysis of the growth of sectoral incomes that explains the cause of the gradual squeeze of the agricultural sector in the pace of development. He evolves a price index of agricultural commodities on the criterion of equal welfare of the people as a whole. The analysis is based on complete interdependence of farm and non-farm sectors of an economy, the applicability of Engel's Law and the existence of a market oriented price structure of the farm as well as the non-farm product.

Commenting on Ralph Turvey's survey, Littlechild demonstrates firstly that the various optimal rules which have been developed may be ebtained rather succintly via a programming approach and secondly that the cost minimising approach which is used sometimes does not yield a unique set of marginal costs. This may be remedied introducing demand functions as well as cost into the analysis (eg) by maximising present value of consumers' plus producers' surplus.

The reason for the possible indeterminacy is that production over time is essentially a joint product of durable capital equipment. The general problem of MC pricing with joint costs is dealt with first in the context of a rather simple case of the same formula structure the peak load pricing problem.

With a technique slightly differernt from that employed by Turvey, in certain circumstances "major" decision rules can be obtained, whereby marginal cost in any period depends upon the values of parameters they hold in that period only. This enables a dynamic model of (eg) peak load pricing to be reduced to the static one usually considered and it enables terminal values to be established for capacity in finite-horizon planning models.

This model offers an interesting approach to pricing and investment under uncertainty for equipment can be regarded as jointly providing capacity in different states of the world. The dual variables may be intrepreted as the value of a conditional claim to capacity is

125. B. F. Massell., Price Stabilization and Welfare. Q.JE., May 1969-PP-284-298.

each state and therefore offer a basis for pricing of interruptable services and occasional inter-utility transfers.[127]

The companion papers of P. A. Samuelson[128] both carried the analysis of the gainsfrom trade derived by a single country significantly beyond Samuelson's classic contribution earlier. The major theorems in these papers are ; (i) free trade is superior to no trade (ii) a higher tariff is inferior to a lower tariffi (iii) restricted trade is superior to no trade etc. Bhagawathi adds certain qualifications to these as follows ; (i) Restricted trade is superior to no trade only if the restriction is brought about by tariffs, quotas or (equivalent) exchange restriction but not if brought about by taxes or subsidies on domestically produced consumption.

(2) A higher tariff is inferior to a lower tariff for a country with neither monopoly power in trade nor domestic distortions only when inferiority of exportables in societal consumption is ruled out ; if this is not done a competitive system may well lead a reduced tariff to result in a deterioration of economic welfare, even then the possibility of improved economic welfare at a different equalibrium position with the same reduced tariff, will always exist.[129]

The export instability of underdeveloped countries is well known and quite a deal of research is being done in this field. Empirical facts available show the high degree of instability of export prices and export earnings. It is far easier to measure the fluctuations in the observed variables of prices and export volumes than to cope with the intractable problems of tracing out and measuring the effects of these fluctuations on growth, income and welfare.

The paper by Berry[130] and Hymer attacks the problem by examing the relationship between unpredictable fluctuations in export

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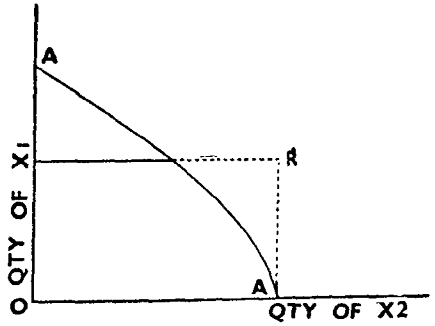
126. P. N. Mishra ; A welfare Criterion for the Determination of Agricultural Prices. *IEJ* October — December 1969 P. 213

127. S. C. Littechild., (Birmingham) Marginal cost pricing with joint costs *EJ.* June 1970-PP. 323-331

128. *The gains from International Trade once Again.* (EJ. December 1962 and Murray Kemp The gain from International Trade (EJ. Dec. 1962)

129. J. Bhagavathi (Delhi school) The gains from Trade once Again ; *Oxford Economic Papers* (N. S.) July 1965. p. 137

prices and fluctuations in National Income and Welfare within the framework of the standard neo-classical model of international trade. They deal with the reasonable conjecture that a country which possessed a high "capacity to transform" would suffer less from unpredictable export instability than a country with a rigid economy, since the flexible economy would be able to adjust and adapt to changing circumstances, whereas the rigid one would not (ie., the variability of welfare associated with a flexible economy would be less than that of a rigid economy for a given variability in export prices.) Hence a country might mitigate the harmful consequences of uncertainty by choosing a flexible economic structure, even if it involved some loss in average income.



As in figures a risk average country might prefer the economic structures devoted by the production possibility curve AA rather than the one denoted by R because of the flexibility of the former.

The result of the model were not in line with the conjecture and problem is more complex and ambiguous than expected. For some ranges of fluctuation the flexible economy had greater variability in income than a rigid economy; for some the opposite was true. Our approach applies to a very specific way of defining flexibility and welfare.

The model is as follows:

The country produces two goods, X_1 and X_2 according to production possibility curve g $(X_1\ X_2) = 0$. The welfare of the country is

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130. Berry R. A., and Hymer S. H., A note on the capacity to Transfer and the welfare costs of foreign Trade fluctuations; *Economic Journal*; December 1969 PP. 833-837.

defined in terms of a set of community indifference curves $U = (\bar{X}_1 \bar{X}_2)$ relating the level of utility to the consumption of the two goods (bar indicates amounts consumed). Trade opportunities are given by the balance of payments equation.

$$P_1 (X_1 - \bar{X}) = P_2 (\bar{X}_2 - X_2)$$

i.e. the value of exports equals to value of imports which is the same as the total production equals total consumption.

i.e. $P_1 X_1 + P_2 X_2 = P_1 \bar{X}_1 + P_2 \bar{X}_2$

The problem is to determine the fluctuations of utility associated with a change in international prices.

$$\frac{du}{d\left(\frac{P_{-2}}{P_1 (A_1)}\right)}$$

as it relates to the flexibility of production structure is the degree to which the production of X_1 and X_2 respond to changes in prices.

As a first approximation it is convenient to concentrate on the change in real income as measured in terms of the amount of X_2 the country can buy rather than the change in welfare associated with a change in prices.

The level of real income Y is so measured that

$$Y = \frac{P_1}{P_2} X_1 + X_2 = P X_T + X_2$$

where $\frac{P_1}{P_2} = P.$

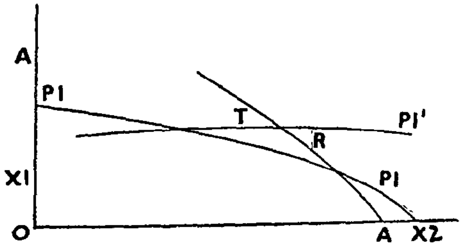
The change in real income as result of change in price is then

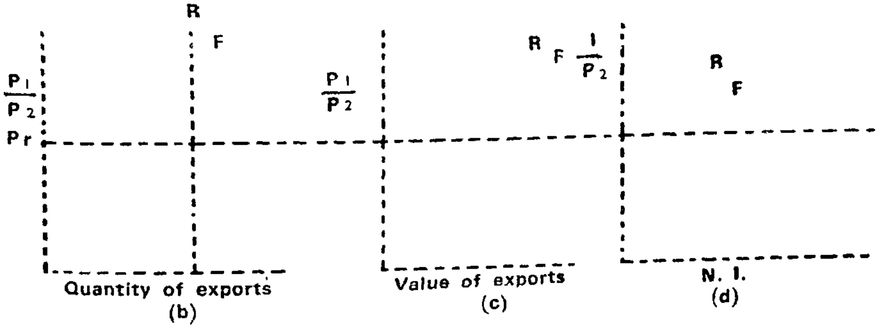
$$\Delta y = X_I \Delta P + (P \Delta X_I + \Delta X_2)$$

When X_I is the output of the 1st good before the change in price and P is the relative price after the change.

$X_I \Delta p$ is common to both the rigid and flexible economies $(p \Delta x_I \Delta x_2)$ applies only to the flexible eoonomy and is called the

recallocation effect since it measures the gain in income resulting from a reallocation of production in response to the change in prices. This term which is always non-negative can be used to define the flexibility of an economy. It is zero in perfectly rigid economy where no adjustments are possible and positive for all flexible economies which increase the production of goods whose price increases and decrease the production of goods whose price has declined. The first term X_1 p is negative or positive depending upon the whether p is — ve or + ve. Thus if the two economies start at the same position the flexible economy will have a greater change in income for a rise in price than a rigid economy and a smaller change in income for a fall in prices.





A flexible economy can produce anywhere along AA¹, whereas the rigid economy produces only at R. Depending on the international price ratio, the flexible economy will adjust production so as to maximise national income by moving to the point where AA¹ is tangent to the price ratio. The rigid economy however remains at R. If the international price happens to be equal to the slope of AA at R thet wo economies have identical production, exports and NI. At any other price the behaviour of these variables is different. Assuming that both countries export

all the X_1 they produce and consume only X_2 then the quantity, value and NI are as in fig (b) (c) and (d).

(1) The quantity of X_1 exported by the rigid economy is constant regardless of price. In the flexible economy it is positive function of price.

(2) The value of exports in the rigid economy is a linear function of price is the straight line R. The foreign exchange earnings of the flexible economy show greater variation in response to changes in prices since a high price induces high exports and a low price induces low exports. The greater fluctuations in export earnings do not necessarily indicate greater fluctuations in income; there is a range within which the rigid economy shows greater fluctuations in income.

(3) The national income of the flexible economy is always higher than the national income of the rigid economy. As P_1 P_2 changes, the change in income is greater in the flexible economy in the range above P_r (price indicated by the slope of the production possibility curve at R) and *less* for prices lower than P_r. Thus if price fluctuates in a range mainly above P_r the rigid economy will be a more stable one. However if prices fluctuate in a range below P_r, the flexible economy will be more stable in terms of income.

Economic growth of a country may affect its real income in two ways i) real income increases by the full amount of the increase in output at constant terms of trade ii) the negative income effect of the actual deterioration of the terms of trade. Assuming that a change in net real income is an index of the change in welfare of a trading country, we can derive a measure of the change in welfare by adding the effects of (1) the change in real income at constant terms of trade and (2) the reduction in real income due to deterioration of the terms of trade :

$$\frac{dwa}{dfa} = \frac{dya}{doa} \quad \frac{-ma\ dp}{doa} \quad \frac{dwa}{doa} = \frac{dya}{doa} = \frac{M_a\ d\ P}{doa}$$

W = Welfare O = Growth agent Y = real income at constant terms of trade M = initial volume of import p = is ratio of the price of A of importable Y to the price of A. Welfare increases or decreases :

$$\frac{d\ wa}{d\ oa} \quad 0 \text{ according as } \quad \frac{d\ ya}{d\ oa} \quad \frac{M_a\ d_P}{d\ 0}$$

Under certatin circumstances the increase in real income of a growing country at constant terms of trade may be more than offset by the loss of real income due to the deterioration of the terms of trade, so that there is a net loss of the growing country itself. Economic expansion in this case is "immizerizing" growth.[131]

In his classic paper on trade-diverting customs unions (1957) and his later survey in E. J. 1960, Lipsey showed how a country forming a trade diverting customs union (ie., one where imports shift from a lower cost to a highercost source of supply *a la Viner*) could none the less register welfare improvement if substitution in consumption were allowed. Lipsey argued that Viner overlooked this welfare improvemnt since Viner assumed consumption to be a fixed coefficient variety.[132]

Bhagawathi in another article contends that the absence of substitution in consumption is not a sufficient condition for trade diverting customs union (as defined by Viner) to be welfare reducing for while this rules out consumption gain to offset in terms of trade loss implicit in trade diversion, variability in production can also be a source of gain. Hence Lipsey's analysis [132] while excellent in highlighting the consumption gain is insufficient in its treatment of the question as to why Viner overlooked the possibility that a trade diverting customs union may nontheless be welfare improving.

When Lipsey's analysis is translated into a general equilibrium model it is easy to see that a sufficient condition for trade diverting customs union to be welfare reducing is that the level of imports is fixed and not that the pattern of consumption is fixed.[133]

Role of source of technological change is closely scrutinized with relation to the growth models and from an empirical policy oriented

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131. (a) J. Bhagawathi Immiserizing growth RES. June 1958 & International Trade and Economic Expansion AER. Dec. 1958.
(b) K. C. Roy Choudhury., Economic Growth, Trade & Welfare IEJ., July, September. 1970. PP. 101.

132. Lipsey R. G. The theory of customs unions: A general Survey. *Economic Jonrnal* September 1960.

133. Jagdish Bhagawathi (MIT) Trade — Diverting Customs Unions and Welfare-Improvement: A Clarification-*EJ*. September 1971, PP. 580-587.

view point. *Nordhus* links these approaches by considering the public good aspects of invention within the context of a neo-classical model. The formulation of the models is designed with forces primarily on the role of externalities and on technical progress in neo-classical models. The results are no different from the general public good problem. The existence of a divergence between social and private marginal products is shown and hence that a perfectly competitive industry would engage in less than optimal amount of research.

From this the optimal subsidy to research costs can be calculated as well as estimates of the welfare loss due to this aspect of technical change.[134] It is suggested by Hughes [135] that the optimal level of research per firm is more than 2 5 times the competitive level while the presence of these externalities leads to a reduction in the level of welfare of about 3.5%.

134. R. Nordhus W. D.,: Invention, growth and welfare. Cambridge Massachusetts. 1969. in E. J., 1970.

135. G. A. Hughes: (Christian College, Cambridge, Mass).